AMERICAN GAS

Association

MONTHLY

DECEMBER 1946 • VOL. 28 · NO. 12

The kitchen that saves in a hundred different ways!

"Four Seasons" Kitchen that's warm in winter, cool in summer and fresh-as-clover all year round. For this latest "New Freedom Gas Kitchen" design has a special ventilating system to whisk away vapors, heat and unwanted cooking odors right at their source. And that's just the beginning! For instance, look at that smart new Gas range built to "CP" standards. It gives you the last word in modern *automatic cookery!* Even dishwashing's easier . . . thanks to the plentiful supply of really hot water from an economical automatic Gas water-heater. As for the best in food storage . . . just read what this new Gas refrigerator can do for you. Order one for the first step toward your own "New Freedom Gas Kitchen"—today!

Frozen "treasure" at your pleasure!

This new—completely postwar—Gas refrigerator has a frozen food locker so BIG you can store a *bushel* (60 standard packages) of meats, vegetables and fruits. Makes more ice, too. Fast freezes up to 10 pounds—in *trigger-release* trays.

GAS

AMERICAN GAS ASSOCIATION

THE WONDER FLAME THAT COOLS AS WELL AS HEATS

Special food savers mean fresher flavors!

The Gas refrigerator assures healthful *constant cold!* As for finer *tastes* . . . there's a big tender-care Meat Keeper and two *dew action* humidifiers for crisping-up limp vegetables and keeping fruits fresh and juicy.

Food for a week—without hide and seek!

Plastic-coated sliding shelves make even "back of box" foods quick and easy to find. And with its exclusive 11-way shelf arrangement every inch of the new Gas refrigerator is usable because *more* foods fit in at *once!*

And here's the best . . . it's motor-less

Silent efficiency! There's not a single moving part in the freezing system to wear out . . . cause noise . . . or need costly repairs. No wonder this beautiful new Gas refrigerator is such a *money-saver* throughout its long useful life!

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This issue opens with an article that tells the story of our industry's aims and leads off with the theme we must follow to successfully jump the hurdles ahead. Good service, intensive research and more promotion are the essence of this entire yule-tide issue. . . . From one end of the country to the other gas has continued to be in the limelight. Equitable Gas Company overcame labor and material shortages to open a swank new sales center. Gas played a major role at the annual Texas Fair, and in Oregon thousands marveled at the gas appliances on display. . . . Laboratories' accomplishments and proposed Technical Section activities, covered herein, indicate that all phases of our industry are forging ahead at full speed. . . . The economics of natural gas, particularly in relation to manufactured gas, are ably discussed by Gardiner Symonds who is an "all out" protagonist of natural gas in any form. His thesis is a "must" for the well-informed gas man. . . . Among other articles of importance is E. M. Tharp's informative study of the industry, in which he points out that there are more challenging possibilities in the industrial market for gas than in any other field. . . . A Merry Christmas to you and a succcessful year ahead full of service, promotion and research!

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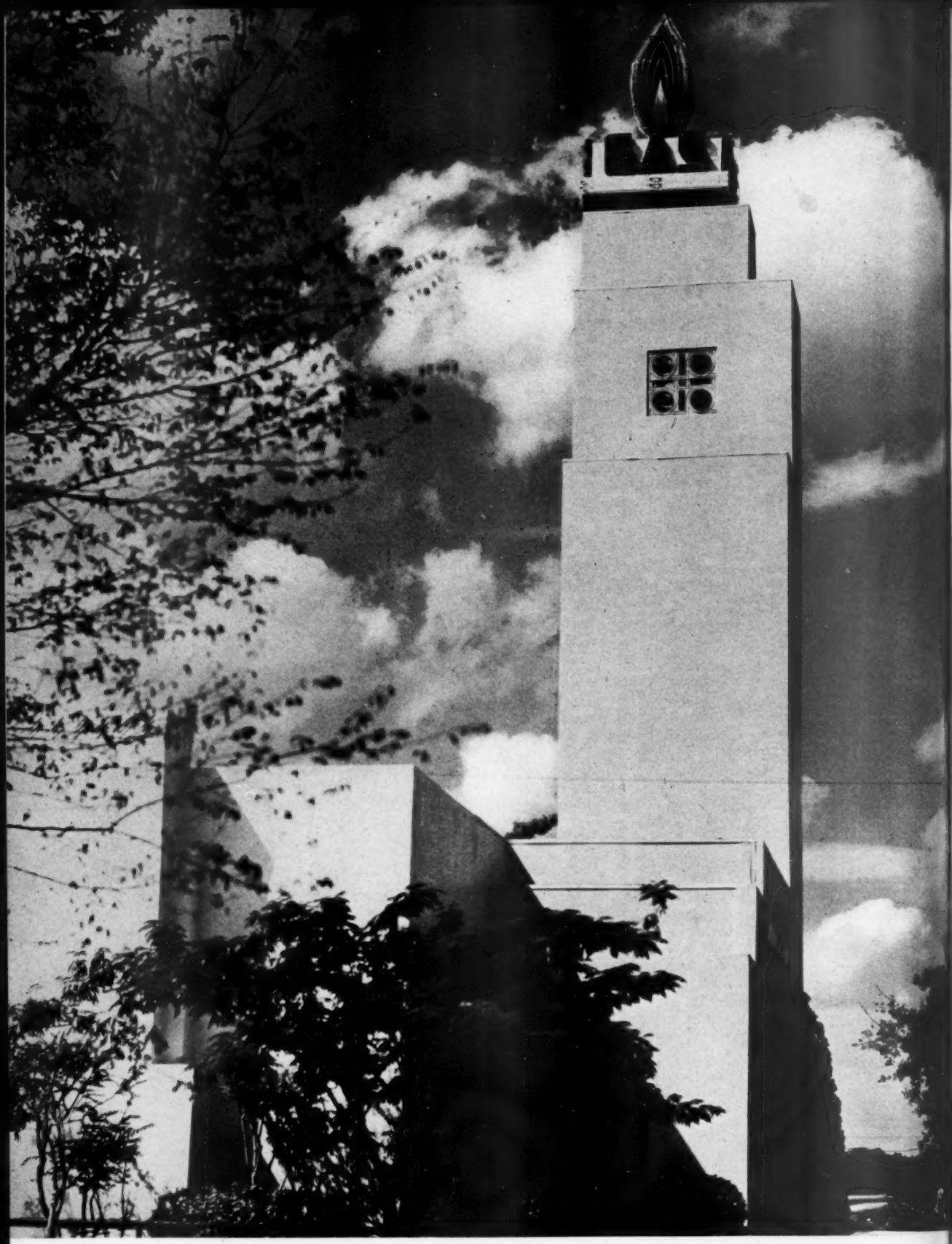


An Industry with a Program

BY H. CARL WOLF

Managing Director, American Gas Association, New York, N. Y.

MORE people are cooking with gas today than ever before. More are using or demanding to use gas for heating than there were total gas customers several decades ago. There are probably more people in this country who know about gas, its glamor and modernity, than there are in India who know how to write.

Eighty-five million people in this country today depend on gas for at least a part of their daily living. One hundred and forty million are better off because of the American gas industry and the tremendous strides it has made during recent years. Over three hundred million messages nationally each year give our people the opportunity to read about gas and the advantages it has to offer.

•

Such results don't just happen. They are brought about by an industry united, with a purpose, a plan and a program. They are made possible by devotion to the cause of service on the part of 120,000 employees and the coordinated efforts of all elements of the industry. They are implemented by the 1020 gas utility companies striving continuously to bring to their 20,500,000 customers the very highest grade of service and the latest products of research and promotion, and to make of the 9500 cities, towns and villages which they serve better places in which to live. All these efforts are augmented by the myriad investors who are willing to sell their money to the gas industry at a price comparable with the cost to other industries. In short, these results are the product of experience gained in 130 years of service, the resolve to advance against all odds, and the ability to meet ever changing conditions with new challenges, all brought to bear at the local level for the benefit of each individual customer.

The industry which shows these results is at the same time static, mobile and dynamic. Static in its stability and its adherence to strong basic principles; mobile in its rapid advances—four million customers added and revenues increased fifty percent in the past ten years, gas mains pushed rapidly across country and through city streets, properties modernized and sales expanded; dynamic in its contribution to better living and the strong competitive challenge which it engenders.

Backing this great industry in its resolve and ability to serve the American people are the industry organizations, sectional and functional, all cooperating and coordinated in one comprehensive pattern with the American Gas Association. I pay tribute to these state and regional gas associations, the Institute of Gas Technology and the Gas Appliance Manufacturers Associations and commend them to you for your interest and support. I pledge my best efforts in keeping them strong, making them even stronger and fully coordinating their programs with ours.

•

The past year has given me opportunity of more intimate acquaintance with the gas industry and its workings. I approached that year with somewhat of a questioning attitude, born, in spite of my familiarity with association work, of my business outlook. I may escape, in a measure therefore, the accusation of attempting to build up a case for a large dominating organization if I undertake to give you a few facts and observations about that organization and what it is doing.

In speaking of the organization I have always in mind an admiration for the industry which it represents, recognizing as I do that the Association in its broader aspects is the industry and the industry, organized, is the Association.

The American Gas Association of today reflects in its operations the characteristics of the industry. As the scope

Presented at American Gas Association's 28th Annual Convention, Atlantic City, October 7-11.

• Opposite: Gas exhibit building of the Lone Star Gas Company at the State Fair of Texas. Shown at top of the 70-foot tower is the huge blue flame done in neon which could be seen at a great distance from the Fair grounds. Story on page 528.

and depth of its activities have been enlarged every effort has been made to build soundly upon the structure, which has been set up in the past, of service to the industry and to the public. By review and reconsideration we are endeavoring to maintain and strengthen all that has been found good and is still essential and to add those new activities that will keep the industry and its services abreast of the times in the minds of its present and potential customers as an alert and dynamic industry capable of greater service than ever before.

The receipts of the Association for this fiscal year are estimated at $2,817,000 coming from five principal sources. Subscriptions to the Research and Promotion Fund, included in which is the National Advertising Fund, account for $1,648,000. Membership dues provide $576,000. The sale of printed and other material will bring in $293,000. Laboratory test fees and inspections account for $300,000. Four special Trust Funds established for special award and educational purposes provide a small income to be spent for these special services.

Expenditures Controlled

The Research and Promotion Funds are closely scrutinized and administered by a special committee chairmaned by Ernest R. Acker and serving as a supplementary control on National Advertising Funds which are carefully spent under direction of a committee headed by D. P. Hartson. The Laboratories Managing Committee under the chairmanship of George E. Whitwell has been an inspiring example of sound business management applied to the complex activities of our Testing Laboratories. All of these Funds come under the over-all scrutiny of, and are coordinated with the General Funds by, the Finance and Control Committee of which James A. Brown is chairman. The Association is fortunate in having this group of exemplary leaders devoting their time and energy to careful and detailed control of its receipts and expenditures. I have been tremendously impressed with the great amount of business acumen which goes into the handling of the Association's fiscal affairs.

The solicitous husbanding of the industry funds adds immeasurable strength to the industry's programs and insures pursuit of those programs on a high-profit level, extending into the operating statements of every member. Let me set up an hypothesis to illustrate my point.

Picture in your mind the Lusterless Gas Company managed by one of those rare individuals, a man who has come up the hard way, largely by his own efforts, selfish and self satisfied, convinced that the best way to get a thing done is to do it himself, asking and granting no favors, driving a hard bargain both in buying and selling, taking no part in community affairs, making no effort to develop customer or public relations, having no interest in the growth or success of his community, ridiculing all new-fangled ideas and relying on the belief that the people must buy what he offers to sell and on his terms. He will have no part in any association, be it industry or business, local or national. He has not read any national ads and thinks that the New Freedom Gas Kitchen is just another Rooseveltian catch phrase. His work, his operation, his organization and his progress (or lack of progress) reflect his outlook and demeanor. His financial showing is by no means a failure but is failing and his balance sheet of public opinion, public service and internal satisfaction is heavily in the red.

Now let's look at an entirely different picture. The Glamorville Gas Company is headed by a man who takes part in every worthwhile community endeavor and originates many of them. His organization is known far and wide as a "live one," a "selling organization" and as "go getters." They belong to all worthwhile community building organizations, to the regional national gas organizations and contribute their full share in both time and money. Their offices and plants are modern, their operations efficient, their public relations excellent, their advertising attractive and their sales programs alert and productive. They go heavily after all possible business and have the entire city "gas conscious" at the same time getting a high rating from their competitors for ethical competition. Accidents are at a minimum; service to the public is of the best. This organization lives not alone, feeds not upon itself but is cooperative in nature, always learning and adopting the best ideas applicable to their business.

Hundreds of A. G. A. committee reports are available, well-thumbed-over. Engineers, service men, accountants, salesmen and executives ply a visitor with questions about what other companies are doing, what the Association is doing and what new ideas have been developed. All are proud of their safety record and of the national recognition it has received. Latest industry statistics are available and compared to company figures. Salesmen and other employees have been selected and trained by A. G. A. sponsored methods. Only the best of appliances are offered for sale, all bearing the Laboratories Seal of Approval. The company is an active participant in and contributor to all national industry programs and insists on knowing how those programs are progress-

Officials of the American Gas Association studying the A. G. A. exhibit at the recent Convention in Atlantic City are: R. H. Hargrove, Shreveport, La., president; Everett J. Boothby, Washington, D. C., past-president; Hudson W. Reed, Philadelphia, Pa., first vice-president and H. Carl Wolf, New York, N. Y., managing director

ing. A Home Planning Center on the sales floor augments a kitchen planning center built around a New Freedom Gas Kitchen. Bill boards, bill stuffers and newspaper ads carry national emblems, even replica of national ads. Everywhere are seen national awards for outstanding performance in sales and other activities. The company has plotted its own future, based largely on industry plans, programs and statistics. In short the Glamorville Gas Company has made itself part and parcel of the nation-wide utility picture, has adopted from the national organization all usable ideas and materials and is fully aware of what is going on across the country.

This whole fund of ideas, knowledge and inspiration forms the core of its own promotional efforts by which new industries are brought in, old ones encouraged to remain and grow and the life of the community enriched through the high grade of selfless service it renders.

The program of the American gas industry which is making possible the success of the Glamorville Gas Company in community up-building, is a multi-headed effort which can be discussed at length but summarized in brief. There are five principal pegs on which it hangs, emblematical of that giant structure which was the focal point of our war victories—the Pentagon Building.

First Aim Is Service

The first peg is one of service. The American gas industry as well as the American Gas Association can exist only in so far as it makes more profitable the operations of its members in rendering service to the public. This is accomplished in a multitude of ways. Inquiries are constant, requests for materials, for service and for assistance on all sorts of problems arise in a never ending stream. Statistical information, a rate service, a library and clipping service, contacts with numerous organizations through which helpful information can be gained, and numerous other details and resources, small and large, make up the day to day routine. The Association provides a medium for clearing helpful information, for originating inquiries and investigations and for group meetings and action. On the strength of this first peg depends the strength of the entire industry.

SAVE STEPS
··· WITH A NEW FREEDOM GAS KITCHEN
OUR KITCHEN PLANNING SPECIALISTS WILL GLADLY HELP YOU
PLAN A LOVELY, LIVABLE, WORK SAVING KITCHEN. NEW FREEDOM
GAS KITCHEN BOOKLETS ARE AVAILABLE ··· FOR THE ASKING.

This unusual window display shows how the Brooklyn Union Gas Company promoted the New Freedom Gas Kitchen at their main offices

Next I would point out the value to the industry of the various meetings which are held across the country which provide an opportunity for the men and women of the industry to get together for a discussion of common problems, to hear reports and talks on topics of lively interest. Such meetings are the best known means of developing acquaintances and out of such acquaintances come tremendously helpful ideas.

A third important peg is the Laboratory—or Laboratories. Instituted twenty-one years ago as a means of improving the character of appliances installed on our lines, the A. G. A. Laboratories under careful supervision of the Laboratories Managing Committee, have rendered priceless service to the American public. Today very few appliances are installed that do not bear the Laboratories Seal of Approval.

At the time the Laboratories were started it took a really disastrous accident from gas to get more than passing notice in the papers. Today, the slightest accident in which gas is remotely involved makes the headlines and many times the gas involved in the accident is far removed from the kind of gas we sell. Need I point out that it is the rare or unusual event that makes headlines!

It is important to point out that the requirements which appliances must pass in going through the Laboratories are those set by a large number of committees drawn from the best possible talent in the industry, devoting numberless hours to innumerable details and imbued with the idea constantly of insuring safety in the performance of our appliances. The General Approval Requirements Committee and subcommittees, as well as the approval requirements themselves, are part of the fabric of the American Standards Association, which connection gives them great importance. It is the job of the Laboratories to test appliances for compliance with these standards and to check on the manufacturers from time to time to insure that appliances actually sold do not vary from the sample tested.

Expanding Research

Another very strong peg in our pentagonal program is research. Research has been greatly strengthened, enlarged and speeded the past year. More than 50 projects are now underway with more being started almost every month. The work touches practically every segment of our industry and involves every class of gas usage.

This research is not academic nor is it designed to provide a pleasant pastime for men of scholarly bent. It is practical and realistic and each project is designed to solve some problem that now perplexes and bedevils or beguiles a substantial cross section of the in-

dustry. Although competent research is not done over night and sometimes results are elusive, the record already shows that the dividends on your investment in this postwar program, and I am speaking of material returns, will be great.

Can a program be called routine or burdensome which is literally tearing the flame apart to see what it does, how it does it, and why? Or which is searching for methods of heat treating metals under vacuum? Or is seeking to develop a practical and safe plug-in connection which would make gas of truly unusual application? Or which is seeking improved methods for producing base load and peak gas economically, sulphur resistant catalysts and new applications for oxygen and methanation? The studies cover a wide range of subjects and are being undertaken in an increasing number of places, our own Association Laboratories, the Institute of Gas Technology, Battelle Memorial Institute, several university research laboratories, laboratories of our member companies, and even of Government bureaus. The field, the application, and the agencies are being broadened continually.

Over-all Research

Technical scientific research is not the only phase nor the only object of our studies. Research on the thinking of the public, on our markets, even on the economics of our business are under review. It is conceivable that a program of economic and market research may soon be paralleling our technical research so that this five billion dollar industry can be even better charted and protected.

The fifth—the newest and yet the oldest peg—is promotion. The entire gas industry is, and for many years has been, tremendously promotion-minded. No other attribute can have accounted for its striking progress. Today we have a definite promotion program, organized and progressing. That program is designed to supplement and augment local promotions, to adopt from such local promotions the best ideas which can be worked into national programs and to keep the industry alive and vibrant in its promotional effort and attuned to the new dynamic competitive economy in which we are moving. The details of the present program have been unfolded in part, others will be coming along. Every endeavor is being made to build an outstanding program, to implement it aggressively and to keep the industry properly apprized.

In looking back over the year and thinking about the status of the American gas industry three questions came to mind. First, is Mr. Citizen any better off for the existence of a gas utility in his community? Second, is the gas utility any better off for the existence of the American gas industry on a coordinated, organized basis? Third, is Mr. Citizen any better off for the existence of the American Gas Association? Unless the answers to these three questions are in the affirmative we might as well close up shop and write off as a bad investment the more than ten billion dollars invested in the gas utilities of this country, in the plants manufacturing gas appliances and equipment in the homes and factories of our customers.

Gas for Better Living

As an average citizen I am convinced that the gas utilities have and are making a lasting contribution to the welfare of our people. As a member of the gas industry I am convinced that the organizations through which it is cooperating are contributing to the well being of our customers. As a close observer of the industry from a favored seat I am convinced that the devotion to service on the part of the industry and all in it is the outstanding motivating force which has caused the industry to fill this vital need. I submit that this is a reality because ours is an industry with a program.

Westinghouse Was A Gas Man

● The name Westinghouse is so intimately identified with the electric industry that it will probably surprise many people to learn that the man who made the name famous had a finger in the gas pie too. It so happens that the year 1946 marks the hundredth anniversary of the birth of George Westinghouse, and in the centennial review of his career, it is revealed that he did considerable developmental work in natural gas resources, piping systems and measuring devices.

Westinghouse became interested in gas apparently through the circumstance that he was living right on top of it. It seems that an abundance of natural gas was discovered at Murraysville, Pennsylvania, in the early eighties. Westinghouse and his wife were living at that time on their estate, "Solitude," about eighteen miles away. At the instigation of his wife, he decided to try for gas in his own back yard, and sure enough, he found a quantity of it. He found so much gas, in fact, that he organized the Philadelphia Company for the commercial development of this and other gas properties which he subsequently purchased.

Westinghouse's development of natural gas, so the story goes, included not only organization of the gas piping system by which it became practical to distribute natural gas over a considerable distance, but even more important to the country at large the design of the pipeline distribution system by which the fuel was carried from well to consumer. He took out more than 30 patents on such equipment.

The Philadelphia Company expanded with the years until it became a multi-million dollar corporation, dispensing not only gas but electric light and power and streetcar transportation within a radius of many miles. Westinghouse was the Philadelphia Company's president until 1899.

Westinghouse also turned gas into mechanical power, by inventing a gas engine of 300 horsepower which in compactness, fuel economy and ease of operation, was superior to a steam engine of comparable power. As a by-product of his research he discovered a process for extracting gas from soft coal.

During the course of his active career, Westinghouse invented the railroad air-brake; a system of electric railway signals and interlocking switches; the electric locomotive; the friction apparatus which absorbs shocks between railroad cars. He pioneered development for practical utilization of alternating current and its distribution system; machinery for the generating of electricity from waterpower; the steam turbine for electrical power generation and maring propulsion; a system for the distribution of natural gas; meters for measurement of the consumption of illuminating gas and electricity. In all, his patents totalled 361; in the course of his business career he founded 60 companies; and at his death in 1914 the industrial empire he founded was worth $200,000,000.

——*Socal Gas News*

Availability of Natural Gas

Analysis of reserves, availability and fundamental economics of natural gas for mixing, reforming and enriching manufactured gas gives optimistic picture for future

BY GARDINER SYMONDS

Tennessee Gas and Transmission Co., Houston, Texas

SOME may wonder what a natural gas man is doing speaking before a meeting of manufactured gas people. I wondered myself, until I considered the subject, which is a rather mouth-filling one—The Availability and Price of Natural Gas for Mixing, Reforming and Enriching Manufactured Gas.

We, in the natural gas business, think there is nothing like it. We are sure that the innermost circle of Hell is fired with straight, pure natural gas, and that there is not a single cubic foot of manufactured gas present for this extra special job.

I presume you people also are sold to a certain extent on natural gas or you would not have asked for this kind of a paper. So I will not dwell on the arguments in favor of using natural gas rather than other agents for enriching. You know the benefits better than I do.

If you are going to partially or completely convert, you want to know two things: how long will our natural gas reserves last and what will be the price of natural gas to you.

Availability of Gas

Let us first take up availability.

I happen to be president of a natural gas transmission line that runs from South Texas to West Virginia. We have invested 75 million dollars in this tube of pipe under the earth and are presently in the process of spending 25 million more. If we thought natural gas would play out in the next 30 to 40 years we would put that money into something else.

So I am completely convinced that there is plenty of natural gas available, and will be for many, many years. In fact, if our scientists are ever able to put atomic energy to work, we may never use all our gas or even seriously deplete the supply.

No one knows exactly how much oil and gas lies below the surface of the earth. The only thing we have to go on is the surveys carefully made by the experts on the subject. In the Claridge Hotel, the Committee on Natural Gas Reserves of the American Gas Association, informed the Natural Gas Section that there is plenty of gas.

Oil and Gas Interrelated

Also in the matter of reserves, oil and gas must be mentioned in the same breath because the two are so closely tied together. There has been a lot of misinformation put out about both oil and gas supply. Twenty-five years ago, for instance, the nation was solemnly warned that our oil was being depleted so fast that we would be completely out of crude in seven or eight years. Yet today, after 22 billion barrels of oil have been produced since that prediction, the estimated reserves of Texas alone are over 11 billion barrels—many times more than we thought the reserves of the entire nation were 25 years ago.

Estimates of the nation's gas reserves have been in the same pattern. In 1919, for instance, our best authorities estimated we had 15 trillion cubic feet of gas under the ground. By 1935, despite the withdrawals of 16 years, this figure had grown to 62 trillion cubic feet and today DeGolyer and McNaughton believe that we have over 144 trillion cubic feet already discovered. Going beyond that, Mr. DeGolyer believes that for the broad considerations of national planning, we should consider our gas reserves at 200 trillion cubic feet.

One hundred and forty-four *trillion* cubic feet! Just how much is one hundred and forty-four trillion cubic feet, to use Mr. DeGolyer's conservative estimate?

Here is how much it is: it is enough to supply the needs of the nation, at the present rate of withdrawal, for thirty-seven years if every wildcat well sunk in the ground from here on out proves to be a duster!

But no one believes that all future wildcats are doomed to failure. In fact, as this talk was being written, Texas oil editors were excited about a new prospective oil field on the Eastern Gulf Coast of Texas. In most instances, where there is oil there is also gas in marketable quantities. The oil people are working for us, in that they find our gas, and we are working for them by taking it off their hands. If permitted to develop it will work out very well for both sides.

Our geologists are convinced that our gas reserves will be increased naturally, through wider exploration. Texas is the most productive oil state in the nation, yet there are thousands upon thousands of acres in the state that have never been explored. Countless thousands of other acres have scarcely had their surface scratched, that is, the driller went down two or three thousand feet and quit.

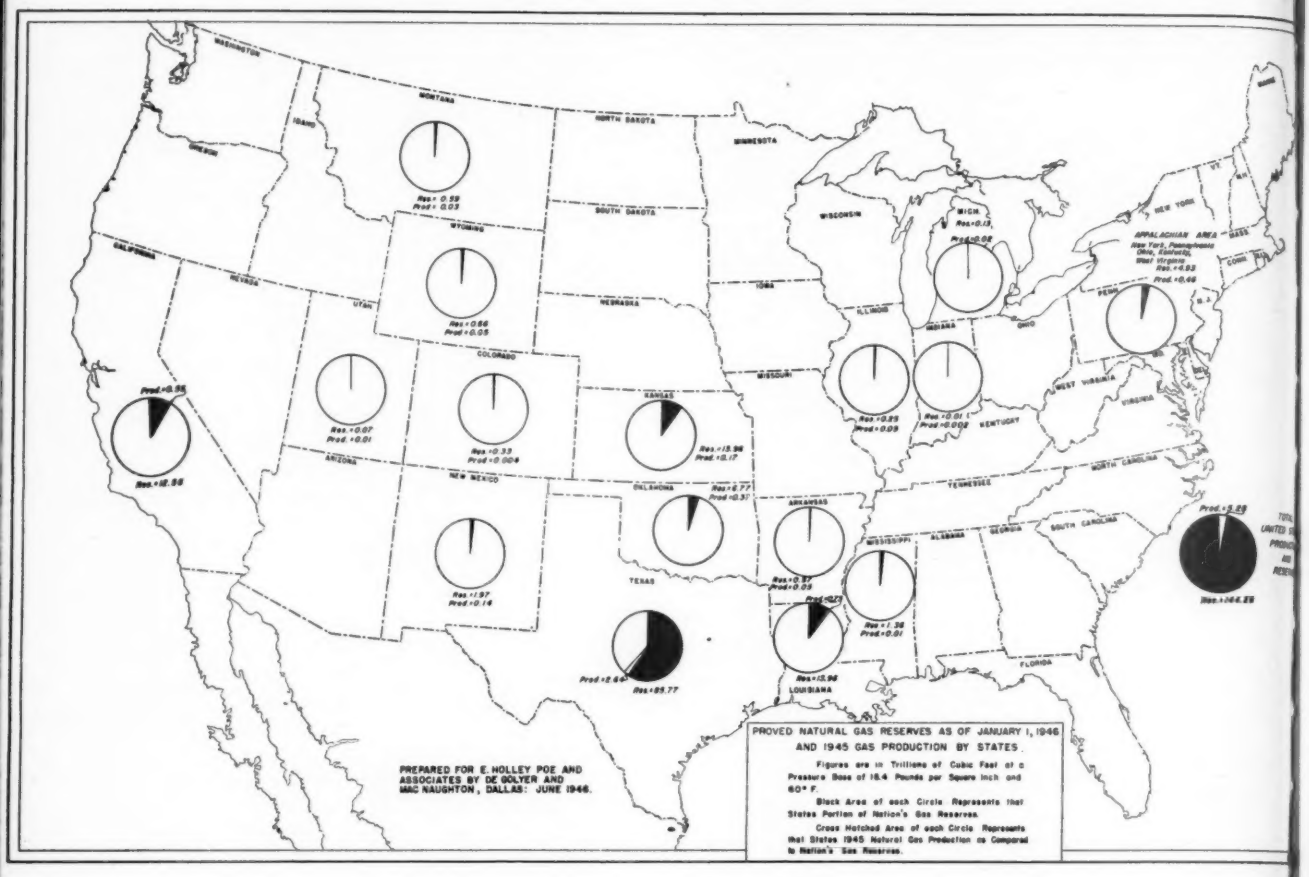
Deeper Oil Wells

The trend toward deeper and deeper oil wells is pronounced. Prior to 1921, for instance, the deepest oil well in Texas was less than 3000 feet, and the average was a little over 1000 feet. In 1930 the deepest well on record in the state was about 8500 feet, and the average was about 2500.

In 1945, however, there had been a well sunk 16,665 feet—over three miles—into the earth, and the average depth of all wells had grown to 4000 feet.

Most authorities think deeper drilling is the most important source of discovery of new oil and gas reserves. It is a common practice now in old fields to go into a well that has about played out and re-work it to a greater depth. In many cases the drill has brought in

This article by Gardiner Symonds is one of four that were given in a symposium on future raw materials for manufactured and mixed gas utilities at the A. G. A.'s 28th Annual Convention in Atlantic City, October 7-11. If space permits the other three articles will be published in subsequent issues.


PROVED NATURAL GAS RESERVES AS OF JANUARY 1, 1946
AND 1945 GAS PRODUCTION BY STATES.
Figures are in Trillions of Cubic Feet at a Pressure Base of 15.4 Pounds per Square Inch and 60° F.
Black Area of each Circle Represents that States Portion of Nation's Gas Reserves.
Cross Hatched Area of each Circle Represents that States 1945 Natural Gas Production as Compared to Nation's Gas Reserves.
PREPARED FOR E. HOLLEY POE AND ASSOCIATES BY DE GOLYER AND MAC NAUGHTON, DALLAS: JUNE 1946.

a producer from a lower zone far more prolific than the original producer.

Moreover, it is comforting to the gas man to perceive that in the past decade, drilling to greater depths has resulted in the discovery of an increasingly greater proportion of gas to oil then was true in prospecting the shallower depths in earlier years.

In other words, the geologists say the deeper we drill, the more likely we are to find gas than we are oil.

Most of you are acquainted with the way practically all of the natural gas reserves in the nation were discovered. They were discovered by accident, which makes even more remarkable this huge gas wealth of ours. It is an exception when a wildcat is drilled for gas.

The gas that we have located was found by drillers searching for oil. In the early days of Texas oil industry, the driller who hit dry gas rather than oil closed down his rig and went somewhere else. After one or two such misfortunes he went broke, for natural gas was utterly worthless.

As a result, billions upon billions of cubic feet of good gas were popped into the air wastefully for the few drops of distillate or natural gasoline that could be squeezed out of it. Casinghead gas, the gas that comes up in solution with oil like the fizz in a soda pop, was flared to get it out of the way. Natural gas was a dangerous nuisance around an oil field.

We are gradually correcting that situation. But more about that later.

So, if we care to take a Chamberlain attitude, we can safely say that there is plenty of natural gas for our time.

But it would be unfair to our children and our grandchildren, and the generations coming after them, to adopt such a selfish outlook. Through wise and far-sighted efforts on the part of the industry, the public, and the governmental agencies concerned with the subject, we think there can be plenty of natural gas for all time.

There are three ways in which we can insure a constant supply, and they are all three very tightly correlated. These are: conservation, a higher field price for natural gas, and intelligent regulation.

People who are looking toward partial or complete conversion are interested in what natural gas is going to cost ten years from now.

I may as well be frank about it. The present price of gas is too low. It can't last,—and it shouldn't last. The price of natural gas must be increased, if we are to prevent the waste that is now going on in our oil fields and protect a heritage for our grandchildren.

This does not mean that the price to you, as a distribution company, will be doubled, or tripled, but does mean that we must increase the price paid the producer to such an extent that he cannot afford to waste such a valuable product. You simply do not waste a product that is valuable.

Let me make it clear here that in a

strict natural gas operation, there is no waste. We even save the squeal. The waste is in the oil fields, where over half the oil well gas produced in Texas is being flared. This waste amounts to nearly one-half trillion cubic feet annually.

This is no fault of the oil operator, but one of economics. This casinghead gas, in many instances, is simply not worth, at present price, what it would cost to save it.

For instance, Dr. Gonzalez of the Humble Oil and Refining Co., says the average price of gas at the well in Texas today is two and one-half cents a thousand cubic feet. He continues that the revenue obtainable from selling the casinghead gas from the average oil well is only about 60 cents a day. This does not come near to covering the expense of gathering, compressing and marketing this gas from the small fields and scattered wells over the state. As a result the oil operator, if he is to continue producing his oil well, has no recourse other than to flare the unwanted gas to prevent a hazard.

The Tennessee Gas and Transmission Co., with which I am connected, is only two years old. I am proud of the fact that we are doing no small job toward establishing a value for gas. We are making possible the utilization of many thousands of feet of gas that otherwise would have been wasted. Whereas the average price of gas today may be two and one-half cents a thousand, we are paying five cents for gas and must pay this price to get it backed up with adequate reserves. We are also picking up the casinghead gas that the oil operators will bring us, and now have contracts calling for over 100,000,000 cubic feet daily of this gas that was previously flared. We are endeavoring to buy more of this gas, and our success in the past leads us to believe that we will have more such contracts in the future.

Price Is Not Proportional

As you know, the distribution and interstate transportation phases of the gas business are regulated. They are regulated by the Federal Power Commission and the various state and local agencies, and the return on facilities devoted to this service are strictly limited. Consequently, an increase in the price to the producer does not increase the price to the consumer proportionately.

For example, we are now paying five cents a thousand for our gas and selling it in West Virginia for approximately 20 cents. There it is picked up by the wholesalers who take it to the city gate for an average of say 40 cents, depending on load factor. If we could pay ten cents a thousand for our gas, we would be raising the price to the producer 100 percent. But when this increase is tacked on to the wholesale price at the end of our line, we have raised our price only 25 percent. The wholesaler, in turn, adds the extra five cents on to his 40 cent price, and the cost at the city gate has been increased only 12½ percent. The price to the ultimate consumer has been raised even less than that.

But there are factors other than conservation that are calling for a gas price increase. Far down in the Southwest corner of the United States, at Brownsville, a gasoline plant is being constructed that may in the next few years make today's gas prices completely out of date.

Gasoline from Natural Gas

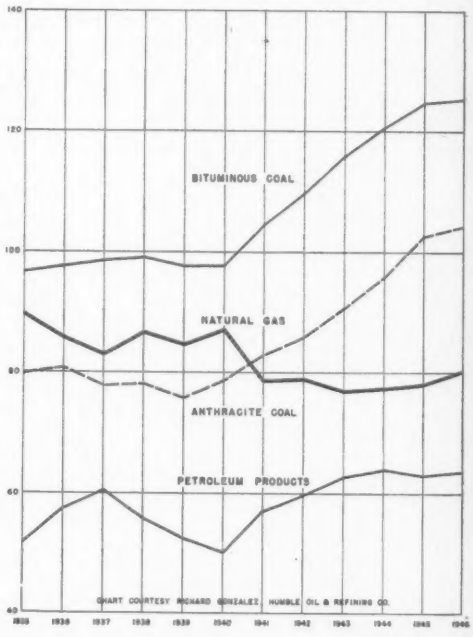
It is the new Hydrocol plant, which will make gasoline from dry natural gas. P. C. Keith, president of Hydrocarbon Research, Inc., who is connected with this plant, believes that this process can make gasoline from natural gas as cheaply as gasoline can now be made from $1.35 cent oil, and still pay a price of 16 cents a thousand for its natural gas!

Thus if the plant is a success, and there is every reason to believe that it will be, gas pipe lines are not likely to buy much gas for five cents.

But so long as free competitive forces are allowed to function in this country, you gas purchasers have little to worry about in the way of out-of-line price increases. High B.t.u. gas can always be made from coal and oil, and if one competing fuel gets too high, the other two will kick it back down through the natural law of economics, and if the price of gasoline from natural gas becomes too high, we may run our automobiles on alcohol.

I have talked a lot about the economics which are going to control the availability of natural gas. In any industry clothed with a degree of public service, the position of the regulatory authorities must be given substantial weight. The gathering of casinghead gas, the elimination of waste and true conservation which will make gas available for generations to come, can only come through the wise application of the principles of conservation. As I said, the gas industry is governed by several regulatory bodies. The producing and gathering activities are under the regulation of state commissions such as the Texas Railroad Commission. The interstate transmission of gas is under the control of the Federal Power Commission, and distribution of gas falls under the appropriate state or municipal regulatory body.

We in the natural gas business have heard a lot about the controversy that is supposed to exist between the position of the Federal Power Commission and the producers of natural gas. We feel that it is in the interest of the industry that matters of producing and gathering be clothed with an intelligent local interest, and we believe that in time legislation will so define this position. In the meantime, to quote from a release of the Federal Power Commission relating to the conversion of a big gas system from a mixed gas to straight natural gas, the Commission said, "In a controversy of this nature, it is the



Wholesale price trends for fuel. Index 1926 = 100

public interest which is controlling. The evidence shows conclusively a demand by the consuming public, especially domestic users, for natural gas rather than oil, wood or coal. It has not been shown by the interveners that it will be in the public interest to deny such customers the use of natural gas proposed in this proceeding."

The attitude of the Federal Power Commission on such matters has been well expressed by their words which have been quoted above, but in practice it doesn't always work that way. For example, a regulating agency may have such a zeal for low prices that it narrows its perspective to the outlook for the next year or so, let alone even a decade. In their desire to accomplish such an end there is a tendency to invade the regulatory provinces relating to producing and distribution. As regards production they can, by insisting upon low current prices which may save a consumer a few cents today, build up a chain of events that will result in waste, lack of development and a short gas supply with much higher prices in a few years.

Prices Must Rise

Thus a staff or field man may report back with pride to his superiors that he was successful in whittling down the rate in Podunk by a half cent a thousand. In turn, his superiors, desiring to impress Congress or the legislature may cite their own records as rate cutters and protectors of the public, never stopping to think that such minor gains today may prevent some producer from gathering and delivering to a pipe line millions of cubic feet of casinghead that are wasted incident to the production of oil.

Mrs. Smith may like to save ten cents a month on her gas bill in Podunk, but it is shortsighted if such a saving is at the expense of many dollars worth of casinghead that doesn't find its way to a useful market. The producer on the farm where such gas is wasted would receive nothing, and there would be a net overall loss to the economy of the county.

Regulatory agencies, state, federal and municipal, were created to work in the public interest; yet by consistently hammering prices, they deny the producer enough of a price to encourage conservation and they build up an increasingly severe uneconomic competition with less desirable fuels. Under the guise of protecting the consumer they do him a real long-range injustice.

Remember, the facilities devoted to the public service, namely the interstate transmission facilities and the distribution facilities, are regulated. There are rules set forth governing the rate of return, and no inordinate profit can be made. I say again that the laws of competition will prevent inordinate profit on the producing side, but a fair and increasing price may be a real aid to national conservation and add greatly to the overall national wealth.

The problem of regulation is one of not being penny wise and pound foolish. Nor can the producing and gathering activities bear all of the weight of conservation. Conservation must be started by government and industry at long range. It is a question of intense local application best given by state commissions just as the price in the towns which you serve, gentlemen, is a matter between you and the city council and not some far off agency. And even the transportation function should be given latitude to extend its facilities to aid conservation.

In conclusion I think that I can say *first,* that we believe natural gas is the best fuel in the world today; *second,* that there is plenty of it now and with proper conservation the supply will last a long time. If producers are encouraged to look with favor upon the pipe line market, our ability to supply you may never be exhausted. *Third,* the price is too low, but a small increase to the consumer may in turn result in a large increase to the producer which will encourage him to do a careful job and to actually engage in exploration for gas as a commodity. And again there is no pyramiding of prices in the gas business. The prices and charges which can be made for interstate transmission of gas to deliver you this valuable fuel are strictly and properly regulated. The nickel or dime which goes to your producer is not multiplied to the consumer.

Application Engineering School Held

NEW school room facilities in the Air Conditioning Division at Servel, Inc. were used for the first time during an application engineering school at Evansville, Indiana, November 11-15. Twenty-eight gas utility men from all over the United States attended the school.

Installed in the new school room are two All-Year Gas Air Conditioners which were used and operated by the "students" at the school.

Calculation of cooling and heating loads, air distribution problems, and presentation of the air conditioner itself were some of the topics for the school. The sessions concluded with a tour through the air conditioning manufacturing division.

The Sioux Falls Gas Division of Central Electric and Gas Company, Sioux Falls, South Dakota, used this attractive window display during the pheasant-hunting season to point out the advantages of cooking with gas. The display stopped many passers-by

What the Public Thinks

Cross-section of American public shows that most people like "big business" and political and social climate in which they live

BY ELMO ROPER

Marketing Consultant, New York, N. Y.

ANY analysis of the American people which seeks to learn the attitudes of the people toward any major facet of national life might well start with an analysis of the overall attitude of the people toward the political and social climate in which they live.

It should be said at the outset, and indeed, there seems to be some need for repeating it at this time, that the American people like quite well the political and social climate in which they find themselves. I do not mean by that that there is not a small minority which would like to substantially alter that climate, nor do I mean that there is not an actual majority which can find individual items to single out for adjustment or change. What I do mean is that a very large majority of Americans like the ideas of democracy and a capitalistic society.

Good Government

I could produce the answers which have been given by a cross-section of the American public to dozens of questions to substantiate this statement. Let's look at one or two. I have heard it stated that the members of unions in America are no longer particularly interested in just getting good working conditions and better wages for themselves, but rather that they are interested in changing the entire structure of our government and its functioning. Let us look, then, at how a national cross-section, composed *only* of labor union members divided proportionately between the C. I. O. and the A. F. L. and the independent unions answered this question:

"Which one of the following most nearly represents your opinion of the American form of government?

Our form of government is as near perfect as it can be and no important changes should be made in it	69.5%
Our form of government worked well in the past but needs to be thoroughly revised to make it fit present-day needs	24.2%
Democracy is no longer working well and sooner or later we'll have to get an entirely new form of government	2.7%
Don't know	3.6%

It is often said that the Russian form of society holds a good deal of attraction in at least certain of its aspects for a considerable number of Americans. Claims are made especially that the Russian system gives its people as a whole a better chance to get ahead, that it gives a better sense of economic security, et cetera, et cetera. Let us look at how much these claims impress our people. Here is a question asked of a cross-section of all Americans before the end of the war, when American respect for Russia as a whole was at a high level:

"Comparing Russia and the United States on a few points, which country do you think————, or do you think they are about the same in this respect"?

	Russia %	*U. S.* %	*Same* %	*Don't Know* %
Gives its people as a whole a better chance to get ahead	2.3	86.1	4.3	7.3
Gives its people as a whole a better sense of economic security	11.1	70.3	5.4	13.2
Has the better setup for encouraging good new inventions	3.0	75.3	5.7	16.0
In 25 years will be more important in world affairs	6.3	65.5	11.5	16.7

Please note that we didn't even ask people to compare the two countries on such obvious democratic advantages as personal freedom. It is perhaps not surprising that those who have prospered under the American system would pick the United States on every count, but the significant thing is that those who have *not* done so well under the American system, the Negroes, for example, or the very poorest of the white people among us, also pick the United States on every count, and by a not much smaller margin than did the more prosperous Americans.

There are, of course, changes which many Americans would like to see made in our way of life. There are among us some who are unhappy because there exists economic discrimination against Negroes, for example. There are those who feel that we have let our legislative processes become over-encumbered with restrictions and that therefore there needs to be a streamlining of the processes of Congress. There are those who feel that the whole theory of collective bargaining has been endangered by excessive governmental interference in that process. There are, in short, a number of changes desired by considerable numbers of people. But it is important to remember, in appraising the changes desired, that it is only an infinitesimal group which would change the basic concept of a capitalistic democratic society.

Businessmen are often inclined to worry lest the people want very great changes in our business system. For example, somehow or other there has grown up a belief that the American people have developed a prejudice against bigness in business; and a prejudice against businessmen themselves. The last few generations have seen a change in America's industrial structure. From a nation of farmers and owners of small businesses we have evolved into an industrial nation increasingly dominated by corporations of tremendous size. We have seen it become harder and harder for an American who

Presented at 28th Annual Convention, American Gas Association, Atlantic City, October 7-11.

wants to be his own boss to follow in the footsteps of his forefathers and surveys show that the desire to be an entrepreneur is particularly widespread throughout America. We have had forced upon our consciousness the very great economic power which accrues to large corporations. We have even seen evidences of the occasional glaring misuse of that power. Mass production with its resultant lowered cost, scientific research on a large and costly scale with its resultant better products, the opening of new employment frontiers as a result of vast combinations of inventive genius, capital, and productive skill—all these have been accompanied by instances of monopolistic abuses, by instances of unfair practices against smaller competitors, by instances of combinations for the restraint of trade, by instances of unwarrantedly high prices and even by instances of outright thievery and defiance of the laws of the land.

Attempts To Correct Abuses

During the last decade we have seen a prolonged attempt on the part of the people, through government, to correct the abuses which some businessmen apparently thought had to, or could, accompany the growth of large corporations. We have had the public consciousness directed to the abuses in our capitalistic industrial system, rather than to the advantages, except as its productive possibilities were dramatized during the war. During the 1930's we threw the limelight on that minority of those men in business who cut corners and engaged in sharp practices rather than on that majority of businessmen who played the game in accordance with high moral concepts as well as strict legal responsibilities. Men in government, the man in the street and businessmen themselves have been shocked at some of the abuses which have been brought to light in the past few years.

What has been the net effect of all this on the opinions of the American people? What has happened to their attitude toward big business as a result of having superimposed on their pride in the industrial achievements of American big business a realization that this industrial achievement has, in a disappointingly large number of instances, been accomplished by a complete lack of moral responsibility and elementary ethics?

For our answer let us turn to the answers given by the people themselves to a number of questions. Here is a question asked in June of 1945, while the war was still on:

"We would like to have your opinion on the ownership and management of certain industries. Do you think the steel (oil, telephone, railroad) industry should now be ————":

	Steel %	*Oil* %	*Railroad* %	*Telephone* %
Left in the hands of private companies	50.3	50.0	58.8	63.7
Taken over by the government during the war	26.1	24.4	21.1	17.5
Taken over by the government permanently	9.7	8.6	8.6	8.3
Don't know	13.9	13.0	11.5	10.5

Even though the answers were given in a time of great stress and unusual conditions, less than ten percent wanted permanent government operation of any one of these industries.

I should like particularly to lay at rest the belief that any considerable number of Americans regard bigness in business as being in itself evil. We recently asked a cross-section of Americans whether or not any of the companies on a given list were too big and therefore ought to be cut down in size. On that list were six of America's largest corporations—the Ford Motor Company, American Telephone & Telegraph, Standard Oil of New Jersey, du Pont, General Electric, and General Motors. Eighty percent of our people either said that none of them should be cut down in size or that they did not know of any which should be cut down in size. A scattering of people selected one or more which they thought was too big for the national interest, and when all of the people who selected any company are added together, they constitute only 20 percent of the public.

Even more revealing as to public attitudes toward big business are the answers to still another question:

"Generally speaking, would you expect a big company or a small company to":

We hope soon to know more about the attitude of the public toward your industry. In doing work for some electric utility companies some years ago, we uncovered one fact which surprised many executives in that industry. We were told that it would be foolish to ask people whether they regarded the rates for electric service as being high, low, or reasonable, because, said these executives, people are prone to regard the rates for all utility services as high. Nevertheless we asked that question in more than a dozen areas in the United States and found what seems to me to be a very significant fact. Where the rates actually were high, majorities called them high, but even in those areas there were minorities ranging up to 40 percent who very tolerantly called the rates low or reasonable. Where the rates actually were low, the majorities willing to describe them as either low or reasonable ranged up into the 80 percent's.

In one area we did discover something which may hold a note of interest and warning for the industry. We asked, "Is the gas company here run in such a way that you feel friendly toward them, unfriendly toward them, or indifferent"? Forty-nine and five-tenths percent said they felt friendly toward the gas company, and only 6.7 percent said they felt unfriendly. This is a very satisfactory ratio indeed, but the disquieting news is in the fact that 43.8 percent described themselves as indifferent. This raises the interesting possibility that if the state of their feelings toward the company could be described as indifferent, possibly they would be indifferent to what happened to the company.

	Big %	*Small* %	*No Difference or Depends* %	*Don't Know* %
Pay labor the best wages	54.0	23.4	14.4	8.2
Develop the best inventions	68.9	11.6	9.5	10.0
Give you the best radio set for your money	69.7	10.6	9.0	10.7
Give you the best gasoline for your money	66.7	9.5	10.9	12.9

I would not like to leave with you the impression that the judgment of a majority of Americans about business, its virtues and its vices and its role in the scheme of things, is exactly the same as the attitude, for example, a group of corporation presidents might have. It is true that majorities of people have decided that certain fields of activity which were at one time regarded as belonging strictly to private enterprise are fields in which government should now take an active role. There are, for example, only six percent of Americans who believe that the government program during the past few years for providing pensions under social security has gone too far. There are only fourteen percent who believe that the government program for providing low cost housing has gone too far. There are only fourteen percent who believe that the government's efforts to prevent extremely low wages have gone too far. There are only fourteen percent who believe that what the government has done to try to help the farmer make a decent living has gone too far. And finally, there are only fourteen percent who believe that the government's efforts to regulate things so that the sale of stocks and bonds is done honestly have gone too far.

Sixty-six percent of the people believe that it is government's responsibility, as well as the responsibility of private industry, to bring about full employment.

Work Is American's Right

The right to work continuously is regarded by most Americans as the cornerstone of that most desirable possession, personal economic security and therefore full employment is of paramount interest to most people. Continuous employment is of equally great interest, and this fact explains the public's attitude toward the guaranteed annual wage. There is no question but that almost everybody, including employers, believe that if year-round employment could be assured everywhere, it would be a good thing. Furthermore, a majority of the people themselves believe it can be done, as is shown by their answers to this question:

"Many large companies have said they would like to guarantee an annual wage to their laborers after the war instead of laying them off during slack seasons but that they can't afford to. Do you think this is probably true, or that most of them could guarantee an annual wage to their workers if they wanted to"?

	Probably True That It Can't Be Done %	*Most Could If They Wanted To* %	*Don't Know* %
Total	27.6	51.4	21.0
Wages—factory	22.7	65.9	11.4

Much has been said about what is supposed to be a widespread public feeling that the stockholders of American industry are given too much of the rewards of industry in the form of dividends. There are, of course, a number of people who think so. But let's look at the answers to still another question:

"In general, do you think our large American companies are paying too big a share, too small, or about the right share of what they make to their office workers (labor, stockholders, top executives)?"

	Too Big	*Too Small*	*Right*	*Don't Know*
Office workers	3.3	50.9	24.3	21.5
Labor	3.5	54.3	29.3	12.9
Stockholders	17.3	11.3	30.5	40.9
Top executives	54.4	1.4	25.1	19.1

Apparently the people who stand convicted of taking too big a share of the total rewards of industry are not the stockholders at all, but management. Maybe there is not as much need for selling the idea that capital is entitled to a fair return as there is for selling the idea that our highly paid executives are doing a good job of seeing to it that capital and labor are used together to produce optimum results if, indeed, they are.

The answers to these questions I have quoted, and the answers to dozens of other questions I could have quoted, show that a great majority of Americans do not need to be sold on the American way of life; they are already sold on it, *(Continued on page 559)*

Copy Capsules

BY HAL STEBBINS

Executive Vice-President, Honig-Cooper Co., Los Angeles

1. To move products, you must move people.

2. When in doubt, leave it out.

3. You can't measure the human equation with a test tube or a tape measure.

4. Remember: The reader is interested in the reader.

5. The answer to "What makes people buy?" is "What makes people people?"

6. People don't think with their "thinkers." They think with their "feelers"—their emotions.

7. The art of writing is the art of restraint.

8. Think about it 3 weeks—write it in 30 minutes.

9. The best headlines are simple words arranged in shock-troop formation.

10. The rarest thing in advertising is plain horse sense.

11. Writing is 90% think-tank and 10% ink-tank. If you keep one geared up, the other won't get smeared up.

12. You can knock a man down and still be a gentleman.

13. S. I. (Self-Interest) is more important than S. A.

14. Play your checkers upstairs: copy well-thought-out writes itself.

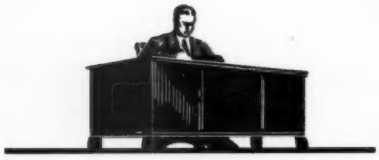
15. Your reader wants the gist, not the jest, of the message.

16. Catch phrases don't catch anybody.

—Reprinted from *Printers' Ink*

A.G.A. Laboratories' Accomplishments

Laboratories report on financial support, advantages of performance tests to industry, as well as how approval costs are kept below 5 cents per appliance certified



Management

BY R. M. CONNER

Director, American Gas Association Testing Laboratories, Cleveland, Ohio

IT seems to me that the things members of our industry want to know most about the Laboratories are generally not found in magazine articles or annual reports. Members of the gas industry have a fairly good idea why our national testing and research establishments were founded; also understand generally what they are supposed to accomplish.

On the other hand, only those intimately connected with the Laboratories possess accurate knowledge of the measure of success attained in accomplishing initial objectives and carrying forward our many activities and services.

Initially a group of supporting utilities supplied somewhat more than $122,000, to start the Laboratories. This was later augmented by about $5,000, by the Natural Gas Association. The American Gas Association owns both our establishments in Cleveland and Los Angeles, and has administered them exclusively since the beginning of their existence.

While funds have been advanced from time to time, these have always been repaid, with the result that at the present time the Laboratories represent an undepreciated total investment of about $565,000. Funds for practically all our expansions, as well as equipment expenditures, have been obtained from our depreciation fund.

Early in our history it was decided as a matter of policy that the Laboratories should not only be self-supporting, but be in a position to meet normal expansions at all times from their cash reserve and depreciation funds. Specifically a depreciation figure of 3⅓ percent per annum was established on all buildings and 10 percent on equipment. Application of this plan has accumulated something more than $215,000, during our existence. This fund has now been largely exhausted. Some day our executives will be faced with the problem of replacing it as they certainly have every logical business reason for doing so.

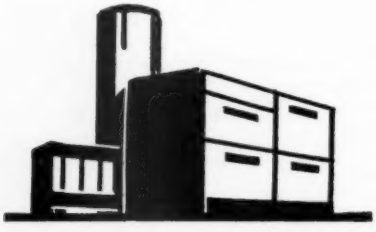
Maintenance

Total revenue received during the past 21 years amounts to more than $5,400,000. This exceeds expenditures of approximately $5,275,000, by about $125,000, or roughly 2 percent. The latter sum is currently characterized as our excess of assets over liabilities. Possibly it might be more appropriately termed a reserve. At any rate, its size clearly indicates how well our Managing Committee has succeeded in balancing revenue against expenditures. This accomplishment is little short of remarkable. It has been made possible only because the committee is supplied a complete statement on financial affairs monthly, thus providing a constant check on operations.

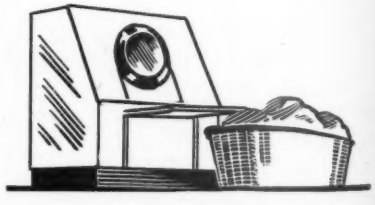
Without going into any great detail, it seems that approximately $2,800,000 revenue has been derived from testing and inspection activities, while the $2,600,000 balance has been jointly supplied by Association research and war work, research being financed exclusively from the Association's General Fund, to which utility members principally contribute. Revenue obtained from the Federal Government for war work totaled in excess of $1,157,000. In fact, for a time during the war years, nearly 70 percent of all income came from such sources. All this adds up to the fact that manufacturers have contributed in the form of testing and inspection fees about 52 percent of revenue, while war work and utility contributions have made up the remaining 48 percent.

Since operations first started in 1925, we have tested close to 30,000 individual appliances and accessories. Although a large number of tests are generally performed on each appliance before certification, most of them are retests made in the process of securing approval. This fact would indicate that our requirements are considerably more severe than generally supposed, notwithstanding a somewhat common impression prevailing largely among utility representatives, to the contrary.

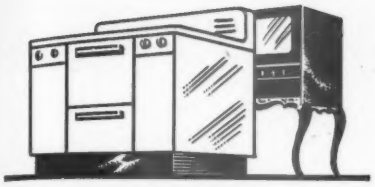
At the present time approval requirements' activities, as well as our general ones (so-called service to industry)



Testing



Requirements



Approvals

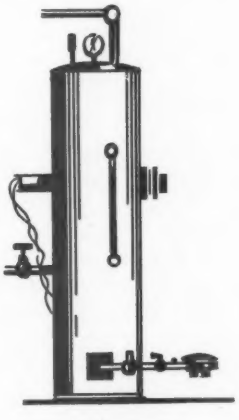
are financed entirely from the Association's General Fund. More than 250 of the industry's best appliance engineers are included in the membership of the Approval Requirements Committee and its 33 subcommittees, divided about equally between appliance manufacturers and gas companies. Supporting our appliance standards we also have installation rules which, fortunately, are very similar to those recommended by the National Board of Fire Underwriters. Thus we not only provide standards for testing almost all phases of domestic gas burning equipment, but also provide rules for installing them.

It is not generally known, for example, that we make over 600 tests and examinations on a gas range for approval. By far the greater part of this total number consists of construction requirements, although most of the time and labor is devoted to so-called performance tests. The actual ratio of construction to performance tests is, roughly, three to one. Of the two types, it is believed the latter is much more important.

Generally speaking, manufacturers are not greatly in favor of construction requirements because the majority of them feel that they restrict development. On the other hand, utility engineers support them strongly and are undoubtedly primarily responsible for the relatively large number that we have. They feel that constructional provisions eliminate many unnecessary service calls, tend to standardize controls, fittings, and even appliances to a desired extent. There are arguments both for and against this general theory. Nevertheless it can be said that such policies have undoubtedly gone a long way in keeping down appliance prices not only to the dealer but to the general public.

There is very little controversy concerning the need for, or the application of, performance tests, for the reason that these represent one phase of activities on which the majority of utility representatives and manufacturers are in full agreement. Notwithstanding this latter fact, the comprehensiveness of our appliance standard coverage, as well as charges to manufacturers in general, are now being investigated by a special committee representing the Association's Executive Board, the Approval Requirements Committee and the Laboratories' Managing Committee. It is well for the industry periodically to review such matters in order that we may be assured that our efforts are properly oriented and that expenditures are fairly assessed to all concerned.

It would be hopeless to even try to review all our tests here. For example, the latest range standards comprise 78 pages. Nevertheless, I do think it would be helpful to review one set, namely the

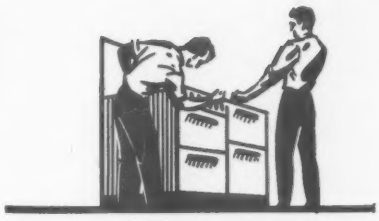


Performance

range requirements. We have some 341 construction standards. For city gas approval alone, 105 performance requirements are also applied. Construction checks are primarily for the purpose of insuring that the materials employed are durable as well as substantial, and that an acceptable degree of standardization is carried out with respect to replaceable parts.

Insofar as performance aspects are concerned, a range must not only be safe, but reasonably efficient in perform-

Research



Inspection

ance. Most important of all it must operate safely during all tests. Perhaps the most important of our safety requirements are our so-called combustion tests made on at least three different base gases. A sample range, with proper initial adjustments, must consume 25 percent in excess of its rated B.t.u. input rating, and still produce no harmful amounts of CO in an undiluted sample of combustion products. All of the test gases employed are relatively difficult to burn.

You may be interested in knowing that about 99.9 percent of all appliances submitted fail on their first test and that occasionally it requires as much as a year for some to secure approval. This condition does not necessarily indicate undue severity of our requirements, but rather the imperfection of some appliances. This situation applies rather generally to all appliances, but is doubtless most pronounced with respect to the listing tests which we make on conversion burners. One reason for this situation is the large number of concerns which have recently entered the field, and the fact that there is such a large proportion of newcomers to our business.

While there are something like 250 cities in the United States enforcing so-called A. G. A. ordinances which require in effect that appliances installed or sold must meet our requirements; nevertheless, we must depend largely on utilities and gas appliance manufacturers to do our policing for us. We have, however, inspectors who travel about 75,000 miles annually. With some 30,000 different types of appliances to look after, however, it is only logical to assume that all cannot be inspected by us. Thus we must depend on other industry agencies for support.

In research activities we are confining the major part of our experimental effort to the perfection of our utilization equip- *(Continued on page 559)*

Gas Scores At Texas Fair

Over 170,000 persons were attracted to the many post-war gas appliances displayed by Lone Star Gas Company

LONE STAR GAS COMPANY rolled up into one unique bundle of glamour all the dreams about post-war gas appliances and laid this bundle before an amazed public at the State Fair of Texas in Dallas, October 5-20.

The thousands of people who examined with appliance-hungry eyes this brilliant array of modern living devices said it was the greatest assembly of gas appliances ever brought together in the Southwest, and that it undoubtedly was the high spot of the great State Fair of Texas.

More than 170,000 visitors were clocked through the doors of the exhibit building during the 15 days it was open, and several thousand others entered without being clocked. This is all the more remarkable because the Lone Star exhibit was in the company's own building, which is some distance from the main exhibits building of the Fair, and therefore, it was necessary to heavily promote the gas show.

The building was erected in 1936 for the Texas Centennial, and at that time was dedicated to the churches of Texas and was known as the Hall of Religion. Throughout the war it had been used by the Texas Defense Guard. When it came time to consider a Fair display the question arose as to whether the building would be used for this purpose or whether space should be bought in the main exhibits hall. D. A. Hulcy, president of Lone Star Gas Co., and other executives, decided to use the company's own building for this purpose. The decision proved to be a wise one, but it also entailed plenty of work, not the least of which was a first-class remodeling job.

Building Remodeled

The entire exhibit enterprise was placed under the direct supervision of Chester L. May, vice-president in charge of distribution properties. The first job was to remodel the building. For this purpose he called in Fred L. Richardson, distribution superintendent. Starting last May, Mr. Richardson, through months of Texas heat, finally got the structure in shape. To install suitable displays and man the building then was a task for many departments in the company and the job was not completed until 48 hours before the opening of the Fair.

Innovation in Southwest

This display was the premier for unveiling the New Freedom Gas Kitchen in the Southwest. Mr. May insisted on the installation of a minimum of four full kitchens. This turned out to be a master stroke, as the kitchens, designed by Servel, with all their breath-taking color and beautiful arrangements, were the sensation of the exhibit. One of the kitchens was in actual operation, and here the crowds, hungering for the story of modern gas cooking, were at times so great that the home economists doing the demonstration, could scarcely move.

All phases of the natural gas business were represented. In addition to the kitchens, there was a dramatic display of the 1947 Servel gas refrigerator. Other display booths showed the latest in water heaters, house heating equipment, industrial, commercial and butane equipment and services. There were also pictorial displays showing scenes of producing and transmitting natural gas. The building was cooled by four all-year gas air-conditioners, two of which were on display where they could be easily explained to the public, and these appliances proved to be magic drawing cards.

Salesmen, home economists, industrial engineers, display men and receptionists to the number of about 30, were required to man the exhibit.

The exhibit building could be spotted from almost any point on the Fair grounds because it had a tower 70 feet high, and on top of the tower was a giant blue gas flame done in neon with the word "gas" lettered out on four sides. This flame could be seen for miles at night, and added greatly in drawing crowds to the building. The display was promoted by large newspaper advertisements, radio programs and announcements, screen advertising, street car signs, and all other available means. The general concensus was that it was worth waiting for and will do a great deal to place the gas kitchen still further out in front in the Texas territory.

One of the four New Freedom Gas Kitchens featured in Lone Star Gas Company's exhibit at the State Fair of Texas. This kitchen was in actual operation all during the Fair and was one of the highlights of the show

Pittsburgh's New Sales Center

Equitable Gas opens new-fashioned sales headquarters—with home service department in ultra-modern settings

The Equitable Gas Company's new general sales headquarters at 610 Wood Street in the heart of Pittsburgh's "Golden Triangle"

THE Equitable Gas Company's new General Sales Headquarters at 610 Wood Street, Downtown Pittsburgh, which opened to the public on November 21, features one of the smartest gas appliance shops in the Pittsburgh district, and a home service division that ranks among the finest in the country. Conveniently located to street car and bus transportation entering the downtown section from all points of the city, the new General Sales Headquarters might be called a "complete customer service center." Here in one building the Company has centralized ample sales facilities to meet every customer's needs, be they residential, commercial, or industrial.

The smart new gas appliance shop, operated by the Merchandise Sales Division under D. E. Brashear, manager of merchandise sales, is located on the first floor of the completely remodeled headquarters building. This store, set up by the company to supplement displays by gas appliance dealers and department stores throughout the area, will display and merchandise highest quality gas ranges, water heaters, refrigerators, clothes dryers, and heating equipment—conversion burners and unit and circulating heaters. No heating equipment will be sold from the floor, as the company requires that each heating job be thoroughly engineered before equipment is selected.

Sparkling white against the pastel-colored walls of the store are the various models of the new Servel gas refrigerator and Servel's all-year gas air conditioner. Automatic gas-water heaters built in various sizes to provide an abundance of hot water are also on display.

A new type of automatic gas clothes dryer on display is the answer to wash-day troubles caused by inclement weather, smoke and soot. For that hard-to-heat room, as a supplement to an inadequate heating system, and for adding peace and comfort to an obsolete fireside, the company recommends one of the gas circulating heaters on display. Five makes of gas conversion burners and several makes of modern gas furnaces, including hot water, steam and warm air, are also displayed. All of the appliances have successfully passed the rigid tests of the company's Appliance Tests Division. These appliances are also handled by various gas appliance dealers and department stores in the district.

Home Service Division

An attractive reception center and kitchen planning headquarters for the company's Home Service Division, and a model New Freedom Gas Kitchen are on the first floor. On the second floor is the Home Service Division's test kitchen and demonstration auditorium, where Kathryn Barnes, the home service director, and her capable staff, will provide customers with helpful information on homemaking, preparation of food, recipes, menus, and other cooking information, and furnish

The new gas appliance sales floor of the company. Commercial and industrial appliances are displayed in a section at the right rear and cannot be seen in this photograph

Model New Freedom Gas Kitchen which adjoins the attractive Home Service reception center and kitchen planning headquarters. It includes a dining nook, planning desk, and other decorative features

At the opening of the sales headquarters are: C. E. Bennett, president of Manufacturer's Light and Heat Co.; D. P. Hartson, vice-president and general manager, Equitable Gas Co.; I. K. Peck, vice-president and general manager, Manufacturer's Light and Heat Co.; and W. L. Hutcheson, sales manager, Manufacturer's Light and Heat Co.

At the Home Service reception center and kitchen planning headquarters in the foreground, every aid to planning an attractive New Freedom Gas Kitchen is available—pictures, scrapbooks, folders, and projection slides. The kitchen planning consultant assists by drawing plans for either a new or remodelled kitchen

consultation service on kitchen planning and gas utilization in the home for cooking, water heating, refrigeration, and home heating. The auditorium will seat 70.

The Home Service Division is a place where homemakers can "talk it over" with experts especially trained in the various problems confronting the woman of the house today. The services offered by Miss Barnes and her staff are many and varied, only one of which is the home service representative. Upon request, these representatives will call at the customers' homes to demonstrate gas appliances and to answer questions concerning their use and maintenance.

Recipes of varying kinds are sent every month to all interested customers who request that their names be put on the mailing list. These recipes, all of which have been tested in the home service kitchen, have been well received by the public.

Another service includes work with clubs and societies, educational groups, and cooperative cooking schools. Lecture demonstrations to such organizations are highly successful.

Special problem service is performed by mail, phone, home calls, or personal contact in Home Service Headquarters.

The remainder of the building will be occupied by other sales activities of the company, among them being those of the Industrial and Commercial Sales Division, headed by Paul W. Craig, manager of commercial and industrial sales; Heating Sales Division, under Leon S. Maehling, heating sales manager; and Sales Promotion Division, under H. C. Given, manager of sales promotion. The Industrial and Commercial Sales, and Heating Sales Divisions provide customers with engineering consultation service on the utilization of natural gas for commercial and industrial purposes, and the heating of homes and buildings.

Government Responds Favorably To Gas Industry Resolutions

HIGHLY favorable responses to gas industry resolutions passed at the American Gas Association's annual convention in Atlantic City, N. J., October 7-11, have been received from various governmental departments.

On October 22, Oscar L. Chapman, Acting Secretary of the Interior, replied as follows to a resolution calling for resumption by the Bureau of Mines of natural gas technical studies interrupted by the war and an enlarged coordinated program of natural gas research:

"It is indeed gratifying to receive this expression of interest of the American Gas Association in the work performed by the Bureau of Mines. The fine cooperation of oil and gas companies, the American Gas Association, and other organizations of the industry, has made possible outstanding achievements in producing, transporting and providing means for the better utilization of natural gas. May this fine work continue with acceleration toward the goal of true conservation which has been expressed as a wise and more efficient use of our natural gas resources.

"The resuming of technical studies interrupted by the recent war and the enlarging of a coordinated program of natural gas research as recommended in the resolution, are being considered by the Bureau of Mines and a comprehensive research program of the type proposed will have my wholehearted support. The extent to which the Bureau of Mines can continue to expand is basic, and engineering research in the conservation and better utilization of the Nation's natural gas resources depends upon the funds provided for that purpose by the Congress."

Copies of a second resolution asking the government to take appropriate steps to assure the gas utility industry of an adequate allocation of steel pipe and other iron and steel products which would enable it to effectively cooperate in the government's housing program and to maintain service to other customers were sent to John R. Stellman, director, Office of War Mobilization and Reconversion; J. D. Small, Civilian Production Administrator; and Wilson W. Wyatt, expediter of the Veteran's Emergency Housing Program, all of whom are giving the problem serious consideration.

In reply to the resolution, Mr. Small on October 31 declared that the Civilian Production Administration is "fully aware of the serious shortage in cast iron and steel pipe, fittings, and other gas and water utility materials and the appropriate branches of this agency have been taking steps to remedy this situation and to render assistance in individual cases where utilities report shortages that would threaten the housing program in any specific locality."

Housing Expediter Wyatt, in a letter dated October 26, indicated that the utilities' material shortage problem is receiving close study by members of his staff. "We are presently engaged," he said, "in exploring the basic policy questions and will very soon be in a position to discuss with the American Gas Association and its members appropriate means of solving the problems mentioned."

Our Equity in Industry

Challenging possibilities in the industrial market are of basic interest—vital to the rounding of load curves and efficient development of full earning potentials

BY E. M. THARP

The Ohio Fuel Gas Co., Columbus, Ohio

THERE are more challenging possibilities in the industrial market for gas than in any other field with which our industry has contact. These possibilities offer not only opportunities for reviewing, but for the balancing and stabilizing of operations which are so essential to the development of earnings. In addition, industry, with the sustaining advantages of gas service, provides a favorable economic atmosphere for the growth and maintenance of those other markets on which we must depend. In other words, our equity in industry is a basic interest vital to the rounding of our load curves and efficient development of full earning possibilities.

First—The Fuel

These are rather conclusive statements to begin with and deserve consideration of background by way of understanding them. Let us then begin by consideration of the fuel itself and its industrial applications. It must meet economically the competition of other fuels, since it is only by such advantage that we may be in a position to offer a service to take any permanent hold on the industrial market. Experience in establishing that gas has, within its utilization, inherent qualities that can not be found in any other fuel. These inherent qualities, of course, have to be brought out through development and research and can be best utilized only if the heating process of any particular industry is built around this fuel.

Some of these inherent qualities which we have come to know may be briefly outlined as follows: Gas can be synchronized with processing industries with respect to time, speed and temperature so that the equipment and the fuel can be automatically mechanized exclusive of the human element to the end that the resulting combined equipment is really another machine in the processing line of production.

Natural gas can be used not only as a heating agent on process work, but can also be automatically re-formed so that the resultant gas can enter into the chemical or metallurgical action necessary to produce the desired product. An example of this is the carburizing of steel, where the carbon from natural gas is infused into the surface of the steel so that the outer surface may be extra hard and have tough wearing qualities. Or, as another example, the gas can be re-formed, the water vapor removed, and the resultant gas acts as a protective atmosphere for materials going through the furnace so that the surface of such materials does not become discolored or oxidized. This method is followed in the bright annealing of copper and steel. These inherent qualities make natural gas far more desirable than does just its fuel value alone. Natural gas can be burned at very high rates, releasing great amounts of heat over very small areas. Development along this line has increased the speed of heating materials so that today ten times as much heat per cubic foot of space can be released than ever before thought possible. Natural gas therefore makes possible specialized heat applications which are impossible with any other fuel.

Higher Standards

Obviously such an extraordinary fuel has an essential character to progressive production in industry and offers such economic implication as ability to pay higher wages, create better working conditions and at the same time produce better and more products at less cost. As the gas industry makes such an outstanding tool available to general industry it necessarily incurs responsibility for continuity and adequacy of service, since industry must completely depend upon a service around which it has built its industrial heat applications to the exclusion of any other fuel. In the heat treating and chemical industries these applications have progressed to such an extent that operations are stopped cold whenever such natural gas supplies are not available.

While this places a heavy obligation on the part of the gas service it affords an opportunity to evaluate such service at a price far above its value simply as a competitive fuel. Research toward better utilization of gas is going on in the heavy industries, such as steel, glass, oil, synthetics, etc., but ultimate development can be made possible only if equipment can be installed to utilize exclusively these inherent qualities of gas fuel. These extra-special gas values can not be developed where gas is sold on an interruptible basis, as where gas is sold by that method its value is restricted to levels not nearly on a par with competitive fuels.

Developments Were Slow

In the early days gas was sold competitively with coal and oil simply as a fuel and usually its application was a crude installation, removable as supply conditions and prices changed the competitive relationship. Recognition of the extraordinary qualities of gas fuel was delayed for years because it was available only off peak. It is only as availability of gas for all-year service improved that its advantages of control, flexibility and chemistry were developed, giving it an essential character for which today there is no substitute. These changes and improvements have been carried forward beyond the expectations of the customers who originally, more or less reluctantly, were persuaded to use gas for their fuel requirements, but also beyond the expectations of gas companies and equipment manufacturers who were urging gas installations.

Now while industry may find gas so

Presented at 28th Annual Convention, American Gas Association, Atlantic City, October 7-11.

desirable as a processing fuel, the question naturally arises as to whether such industrial markets are desirable to gas companies. In the case of our company, industrial load accounts for about 40 percent of total sales volume, with an 82 percent load factor. The load factor of our domestic and commercial sales is about 40 percent and house heating about 24 percent. It will be apparent that the industrial load raised our overall load factor to 50 percent. As house heating saturation increases and domestic load factor shifts from 40 percent toward 24 percent, the importance of compensating high load factor industrial sales becomes more pronounced.

It is certainly not correct or proper to say that our industrial load is the best load or more desirable than the base domestic load for cooking, water heating and refrigeration; rather it should be recognized that the domestic and industrial loads are complementary and the advantages derived from each reflect in favor of the other.

Surely, none of us need be reminded of the enormous volume of central heating load being connected to our systems and the problems with which we are confronted as a result. The unprecedented rate at which this load is being connected is partly due to our own promotional and sales effort of the past, but probably more directly traceable to the changing economic status of gas, because of increased earning power and spendable income and the increased prices and limited supplies of other fuels. If this be true of gas as a fuel for central heating purposes, then it must also be true in the industrial field. It may also be said that if the position of gas is improved in the economic fuel scale, more fields of industrial application are opened up. It would, therefore, seem to be a very propitious time to actively promote the sale of gas for industrial purposes.

Domestic Gas Sales

From where we stand today, it would seem that the sale of base load domestic gas per customer is approaching the ultimate. Our efforts in this field are now devoted to holding what we have against competition and attempting to equip all new homes with appliances and service for these base domestic purposes. While the gas industry is constantly growing in number of customers served, it would seem that unless and until people can be persuaded to do more home cooking and more home laundering, the gas sales per customer will not show any appreciable increase.

In the meantime, the sale of gas for central heating purposes is growing by leaps and bounds, and the sales for this purpose bid fair to equal or exceed those for purely domestic purposes. The current attitude so generally expressed in our industry of prohibiting or discouraging the installation of heating equipment cannot be held indefinitely, and our plans must contemplate the handling of this load in a satisfactory manner whether we like it or not. To minimize the effect of this load upon our investment and our operations, it is desirable to strike in two directions: First, to seek a compensating and balancing summer load, and second, to build our industrial load so that heating sales represent a lower proportion of the total sales.

Boosting the Sales

The opportunities in the first direction are somewhat limited. The development of the Servel air conditioning unit seems to offer some possibilities, but time will be required before any appreciable load can result from this source. In the industrial field there are certain operations or processes that are carried on either completely or to a large extent during summer months. To mention a few, there are asphalt plants operated in conjunction with street construction and repair programs, hay driers, food dehydrating plants, food processing and canning factories. Except possibly in the southwest, there has been little work done by way of promoting the gas engine for industrial application. There is a field for this development, particularly in natural gas territory, for ice manufacturing plants and food locker plants, both of which experience summer peaks.

The opportunities in the second direction, that is building year-round industrial load, seem almost unlimited, and it is not here necessary to dwell particularly on the theme. I would only point out that such load should be well diversified as between industries. Our business is bound to follow the general economy trend or cycle of business activity, but if the proper attention and effort are given to the diversity of industrial applications, our business in the industrial field need not follow the cycle of any particular industry or activity.

Let us consider for a moment the probable differential in cost of service as between an industrial load and a house-heating load. Assuming a maximum load of 30 million cubic feet per day and that the diversified industrial load would have a load factor of 80 percent, while the house-heating load would only have a load factor of 24 percent, we could expect industrial sales of 8,760,000,000 annually and house-heating sales of 2,628,000,000. If the cost of a manufactured gas plant is taken at $250 per thousand of daily capacity and this investment carries an overhead burden of 12 percent, the charge per thousand of industrial sales would be approximately 10 cents and against the house-heating sales about 34 cents.

If you operate a transmission system in connection with your operations, which represents an investment of $50,000 per million of daily capacity, and the overhead on this investment is taken at 10 percent, there would be a charge of two cents per thousand against industrial sales and seven cents per thousand against house-heating sales.

Distribution System Needed

Then we have a distribution system representing an investment of, say, $75,000 per million of daily capacity for domestic service. There probably is no distribution system which was constructed and operated entirely for industrial service, but this would be a much simpler and more economical layout than our normal distribution system, and it is here assumed that such a system would only represent an investment of $50,000 per million of daily capacity. Translating a 10 percent burden on these investments into gas rates, there would be a charge of two cents per thousand against industrial sales and eight cents against house-heating sales.

Summing these up, we have a total charge of 14 cents per thousand against industrial sales and 49 cents against house-heating sales, or a differential of 35 cents per thousand in favor of industrial service. Generally speaking, we do not find such a differential in rates of these two services. It has been the

policy of most companies to provide the lowest rate for house-heating service reasonably consistent with other rates. This, obviously, has meant that other classes of service have to some extent been penalized.

With the improved position of gas in the competitive fuel scale, we have the opportunity of re-examining our rate schedules and providing rates which will place upon each class of service its just proportion of cost. When this is done, bearing in mind the excellent load factor and stability of the industrial market, there would seem to be an opportunity of appreciable development and expansion of this service.

It is an accomplished fact that our industrial machine is geared to gas and it is consequently dependent on gas fuel for continuing operations. In years past industry has used gas, seen the supply dwindle to a vanishing point, adjusted itself by conversion back to original fuels and gone its way again after suffering only temporary set backs, but present conditions are not analogous.

Changes Have Transpired

The last twenty-five years have evolved important changes. The development of methods designed to make the most of every potential advantage possessed by gas, both by concerted action on the part of our industry and by these industries themselves has resulted in a condition which you cannot escape taking into full account in considering these matters.

The fact that this is true has been beneficial to us as well as to our industries. Further than this it has been in the public interest. It has permitted the development and advancement of the art of metal working, glass making, and in other fields beyond points otherwise attainable. I would go so far as to say that no other single factor has contributed as much to making possible the quality mass production which is our pride as a nation. I would point out as a significant fact, that no other country in the world developed (or was able to develop) in their industry this dependence on gas and ask you to consider how large a bearing this one factor might have had in establishing our industrial supremacy and winning the war.

We are all familiar with the attempts made during the war to convert certain processes served by gas to other fuels and we know in how few cases this was found possible. So whether we like it or not, whether we agree that the part we might have played in this development was wise or not, it is nevertheless an incontrovertible fact that general industry is geared to and dependent upon gas, not necessarily our gas, but some gaseous fuel. We cannot escape the necessity of considering this fact in connection with our own problems.

Industries Need Gas

Whether we have a moral responsibility to industry to continue to serve their needs is quite beside the point. The facts we must consider are that our industries are dependent on gas and that the communities we serve are in turn dependent for their well-being on the retention and prosperity of these industries. The availability of gas at favorable competitive prices was a controlling factor in securing, developing and expanding our local industries and community wealth and prosperity followed as a natural result.

It isn't just a coincidence that we went through first a period when the use of gas by industry was expanded and that now we are confronted with an unparalleled demand for gas for house-heating. What we are witnessing is nothing more or less than the working of the sequence of cause and effect. I am perfectly well aware that we have just come through a war and that fact might have something to do with this flush of prosperity but it was through industries such as our communities enjoy that the bulk of money spent on the war was distributed. In the communities which we serve the amount distributed per capita was greater than the average for the country and this just didn't happen for no reason at all. It happened because our industries were set to do the job, and this in turn because they were geared to gas, the one factor that makes possible the optimum in quality mass production and for which today there is no known substitute. If you don't like operating in prosperous communities and would like to change these conditions, then the surest and quickest method you could employ would be to choke off your industries. Cut these supplies that are so vital to them and in time, some quickly, some more slowly, they have no alternative but to retrench or move to localities where these needs can be supplied, and if this happens, the business of your community, your business, will never again be the same.

I am talking in generalities to save time. I am not developing this thought as carefully or completely as it deserves to be or as I would like to. The effect of gas curtailment or withdrawal will, of course, be greater in some plants or industries than others, but throughout our territory we could withdraw only an insignificant amount without setting up a chain of circumstances that might adversely affect all phases of our business. You cannot "eat your cake and have it too." House-heating load is luxury business. You can develop it only in parallel with or following the development of your industrial load, because this and prosperous communities are synonymous.

Industrial Load Important

If you are enjoying this free spending attitude on the part of your public and hope for its continuance, I want to point out that your industrial load has been and still is the "goose that lays these golden eggs." There is a fable handed down to us that tells us of a man who tried to over-simplify his problem. He took the short cut and killed this goose to obtain immediately a lot of golden eggs.As I recall the story, he was not very successful and little children are not taught to consider him a particularly smart operator. I would suggest not only that you permit this goose to live but that if you are interested in a high productivity of golden eggs, that you feed her well.

We have to accept our business as we happen to *(Continued on page 559)*

Ladder To Success

100%—I did!
90%—I will.
80%—I can.
70%—I think I can.
60%—I might.
50%—I think I might.
40%—How do you do it?
30%—I wish I could.
20%—I don't know how.
10%—I can't.
0%—I won't.

Poisonous Plants

Plant dermatitis is traced to the three plants described.

POISON IVY has three leaflets which may have a smooth or slightly notched edge. The berries are small and whitish and are produced in an erect cluster. This may be in the form of a woody vine, trailing shrub or low erect bushes.

THE POISON OAK also has three leaflets but they are shaped somewhat like an oak leaf having from three to seven rounded lobes around the edge. This plant also has berries of a whitish color and grows in much the same fashion as the Poison Ivy.

POISON SUMAC never appears as a vine but may be a shrub a few feet in height or a tree up to 20 feet in height. The slender drooping bunches of whitish berries are the most distinctive characteristics of this plant. The leaf clusters are not different from those of the non-poisonous sumac which have the erect clusters of red or brown fruit.

Infection

Any contact with these poisonous plants is to be avoided. The excitant is the oil which may be picked up by direct contact or by contact with anything that has touched these plants such as clothing, shoes, automobile tires, animals, etc. Droplets of the oily excitant or particles of the plant can be carried in the smoke of any of these plants when being burned and dry twigs, leaves and roots retain enough excitant to cause an eruption if handled. The most effective way of removing traces of these poisonous plants from clothing is to have the garments dry cleaned. Soap and water is not entirely effective and clothing has been known to cause irritation for a period as long as a year.

The eruption is not contagious for the contents of the blisters cannot produce irritation even in the most susceptible. Just as clothing can hold the excitant, so can the skin surface of a human being (for a few hours or until the first bath), and the contaminated skin area of a person recently exposed can on contact cause the skin of a highly sensitive individual to become affected. This is probably the manner in which the eruption is spread over the skin surface of the individual himself. Some of the secondarily contaminated areas may react soon while others will have a long incubation period.

Symptoms

Usually several hours elapse between exposure and the first sign of eruption although there are cases where this interval has been as long as fourteen days. The effect of the poison is evidenced by reddening and severe itching of the skin. Small watery blisters will appear beneath the surface of the skin. One characteristic frequently found is that the blisters are in linear arrangement because of distribution by scratching or brushing of the leaves or twigs or through spread of the excitant on the skin surface by the patient's scratching. If possible these should not be broken because other infection may develop.

Treatment

After exposure the parts of the body which have come in contact with the excitant should be thoroughly washed with yellow laundry soap and hot water, a solution of potassium permanganate, kerosene, gasoline or alcohol. Only the excitant remaining on the surface is removed and/or destroyed by these procedures. Within above five to fifteen minutes after contamination of a skin area, no amount of cleansing or oxidizing will prevent the appearance of dermatitis in the affected skin of a sensitive individual. This should be followed by applying a 5 percent alcoholic solution of Ferric Chloride or a water and alcohol solution of Aluminum Acetate. Itching can be relieved by applying 3 or 4 percent phenol. In severe acute cases, perhaps the best first approach is to remove clothing, apply potassium permanganate soaks, or, in generalized cases, to give baths containing potassium permanganate or starch.

A physician should be consulted if there is any sign of severe irritation.

Prepared by L. K. Richey, Michigan Consolidated Gas Company, Detroit, for the Accident Prevention Committee, of which H. T. Jayne is chairman.

Prevention

The only sure way to prevent plant dermatitis is to avoid exposure. When it is necessary to work among poisonous plants the use of protective clothing and a thorough knowledge of the plant's appearance in their many guises is the best safeguard. Preventive measures including using oxidizing creams and desensitizing measures such as oral doses or injections of the excitant or baths in dilutions of the extract are still in the experimental stage.

Eradication

The most effective way to eliminate these poisonous plants is to spray them with the prepared weed killers now on the market. These sprays are not selective and will injure or kill other plants also.

A solution of ordinary salt, 3 lbs. per gallon of soapy water, sprayed on the plants in the late spring is also effective. This may have to be repeated after two or three weeks if new leaves appear. This solution will be injurious to other plants.

Crankcase oil thinned with kerosene is also effective at any time of the year but will kill all other vegetable life on which it is sprayed.

Pulling out the plant, root and all, is also effective but entails hazards that are not worth the risk.

Accidents in the Gas Industry

356 utilities took part in the 17th annual survey of accident experience in the gas industry which shows continuing upward trend in frequency and severity rates

THE Bureau of Statistics of the American Gas Association, in cooperation with the Accident Prevention Committee and the National Safety Council, makes a survey annually of the accident experience of the gas utility industry. The data collected cover fatalities, permanent total disabilities, permanent partial disabilities and temporary partial disabilities, and are analyzed by frequency and severity rates computed in terms of number of injuries and number of days lost through injuries.[1]

In the seventeenth annual survey covering the year 1945, 356 utilities participated; 203 were primarily engaged in the transportation or distribution of natural gas and 153 in the distribution of manufactured or mixed gas. In developing the various rates, data pertaining to all operations of straight gas companies as well as gas departments of combination companies were used. Information for combination companies which did not report separately for the gas departments was not used. The reporting companies had an average of 94,382 employees in 1945 who worked a total of 207.6 million hours. Their experience covered an estimated 84 percent of the total employees in the industry and is published in greater detail in Statistical Bulletin No. 60, American Gas Association, which this article summarizes.

[1] *Fatality* includes any death resulting from an occupational injury, regardless of the length of time which elapses between the accident and death. *Permanent Total Disability* is any injury, or combination of injuries sustained in one accident, which permanently and totally incapacitates the injured worker from following any gainful occupation.

Permanent Partial Disability is any permanently disabling injury which does not result in death or total disability, such as amputations and impairments of the function of specific parts of the body and functional impairments of a generalized nature. All permanent partial disabilities are counted, regardless of whether the injured employee lost any time.

Temporary Total Disability is an injury which results in no permanent disability but which, in the opinion of the attending physician, is sufficiently serious to prevent the employee from returning to a regularly constituted job within 24 hours after the beginning of the shift on which he was injured.

Accident Experience of Total Industry

Accident rates in terms of both frequency and severity increased in 1945 for the second successive year for the total gas utility industry. Table 1 shows that disabling injuries increased 11.4 percent to 15.82 for each one million hours worked and 11.9 percent to 3.47 for each 100 employees. These are the highest frequency rates recorded since 1936. (See chart I)

Severity rates also increased in 1945 but to a lesser degree. Days charged to disabling injuries for each 1,000 hours worked increased less than 3 percent to 1.18 and days charged for each 100 employees increased 3.8 percent to 259.7. The total number of days charged to disabling injuries also increased 3.8 percent to 245,066 in 1945 whereas the increase in 1944 in total days charged was greater than 18 percent compared with 1943.

There were 26 fatalities and permanent total disabilities reported in 1945, a rate of .0275 for each 100 employees compared with .0261 in 1944. Table 2 classifies and describes briefly the accidents resulting in these fatalities.

Accident Rates by Branch of Industry

Table 3 analyzes the 1944-45 changes in total industry rates by the two principal divisions, companies distributing manufactured or mixed gas, and those transporting or distributing natural gas. The table shows *percent changes* and offers an interesting comparison not evident from the total industry summaries.

Frequency rates for disabling injuries

TABLE I

ACCIDENT EXPERIENCE OF THE GAS UTILITY INDUSTRY IN THE UNITED STATES 1936–1945

(These data cover all operations of reporting gas utilities and gas department operations of combination companies.)

Year	Number of Reporting Companies	Number of Fatalities and Permanent Total Disabilities	Total Number of Disabling Injuries	Total Days Charged Due to Disabling Injuries	Frequency Rates: Number of Disabling Injuries per 1,000,000 Hours Worked	Frequency Rates: Number of Disabling Injuries per 100 Employees	Severity Rates: Number of Days Charged Due to Disabling Injuries per 1,000 Hours Worked	Severity Rates: Number of Days Charged Due to Disabling Injuries per 100 Employees	Number of Fatalities and Permanent Total Disabilities per 100 Employees
1936	457	30	3,616	288,378	15.40	3.28	1.23	262.0	.0273
1937	480	24	3,348	225,698	13.81	2.93	0.93	197.7	.0212
1938	446	23	2,825	223,114	11.96	2.51	0.94	198.1	.0204
1939	433	16	3,099	175,739	12.72	2.62	0.72	148.7	.0135
1940	449	36	3,429	316,436	13.77	2.83	1.27	260.8	.0297
1941	456	23	3,211	212,575	13.58	2.74	0.90	181.1	.0192
1942	439	29	2,983	259,919	13.89	2.88	1.21	250.6	.0280
1943	416	19	2,624	198,146	13.13	2.80	0.99	211.6	.0203
1944	403	24	2,848	229,788	14.20	3.10	1.15	250.1	.0261
1945	356	26	3,275	245,066	15.82	3.47	1.18	259.7	.0275

TABLE II

CLASSIFICATION OF 26 FATAL ACCIDENTS WHICH OCCURRED WITHIN THE GAS INDUSTRY DURING 1945

Accident Type	*Occupation of Employee*	*Department*	*Description of Accident*	*Case No.*
Burns	Light Oil Plant Helper	Production	While filling tank car with crude light oil. Left oil flowing, to procure a tool. Car overflowed, attempted to put out fire caused by flare thrown from passing train. Clothing caught fire and severe burns resulted.	1
	Utility Man	Production	Installing and regulating new water gas machine, cleanout door at bottom was opened without letting machine and oil cool, oil became ignited and burned employee severely.	2
	Gas Maker	Production	Was fatally burned while cleaning a shut down set. Fellow employee, for some reason, opened waste heat boiler's cleaning door on a set in full operation.	3
	Helper	Street Dept.	Lit fire in can, while cleaning tool wagon and filling and lighting kerosene lamps, wind caused flame from can to ignite oil soaked clothing resulting in fatal burns.	6
	Sub-operator	Transmission	Explosion and fire in main compressor building, caused by rupture of faulty riser pipe during excavation, resulted in third degree burns from which death resulted.	12
	Oiler	Transmission	Attempted to close pipeline gate when compressing unit exploded, caught in flames from second explosion.	9
	Foreman	Transmission	Was testing for leaks on twin scrubbers. Someone opened the 2" stop on the line of other scrubber, releasing gas and kerosene at 175 lbs. pressure which was ignited by welder's torch.	20
	Welder and Helper	Transmission	Was testing for leaks on twin scrubbers. Someone opened the 2" stop on the line of other scrubber, releasing gas and kerosene at 175 lbs. pressure which was ignited by welder's torch.	21 & 22
	Company Inspector	Maintenance	High pressure main pulled apart at coupling through insufficient care and handling by contractor, escaping gas ignited resulting in fatal burns.	19
Automotive—Cars, trucks, moveable machines.	Conveyorman	Production	Fell or got on Conveyor, which was running light. Was found jammed in the chute at the head end.	4
	Laborer	Production	Truck was descending hill, left main route for black topped road and dropped into a ravine.	13
	Laborer	Production	Jumped from cab of truck as it started descending hill. Opinion is that his head struck rear right wheel.	14
	Utility Man	Transmission	Riding in rear end of company truck. Truck and train collided at railroad crossing.	18
	Pipe Line Repairman	Maintenance	Was passenger in company owned army command car. Tire blew out and turned the car over.	15
Explosions	Compressor Station Engineer	Transmission	Regulator setting exploded. No one knew why deceased was in there or what he was doing.	8
	Tour Foreman	Transmission	Ran from house nearby upon first explosion. Was at rear of station building attempting to close a pipe line gate, when second explosion demolished building.	10
	Foreman-welder	Maintenance	Removing leak clamps from pipe, to replace worn rubber under plate. As last clamp was being removed, pipe split blowing him from line.	17
Falls	Chief Engineer	Transmission	While inspecting paint job on roof of main pump house, he appeared to lose control of himself and fell 20' to ground.	11
	Laborer	Maintenance	While painting roof of company building, stepped into some freshly applied emulsion, lost balance and fell from roof.	7
	Meter Reader	Central Office	Having read the meter, he ascended the stairs and upon reaching the top, he suddenly fell backwards down them.	5
Drowning	Skilled Laborer	Pipe Line Dept.	With water covering bridge to depth of 3', attempted to cross construction bridge over swollen bayou. Fell through or tripped on open space in bridge flooring.	16
Suffocation	2 Regulator Repairmen	Distribution	Packing Gland around high pressure valve in manhole. Started leaking. Inspection found bolt threads stripped. One of three man team took truck, carrying safety paraphernalia to town for grease. Man entered manhole to add packing, which blew out, suffocating him. Other man suffocated trying to rescue him.	23 & 24
	Local Manager and Foreman	Distribution	Foreman entered pit to adjust regulator. Was overcome by escaping gas. Local manager also suffocated trying to rescue him.	25 & 26

TABLE III

PER CENT CHANGE ACCIDENT RATES 1944–1945

	Frequency Rates		
	Mfd.	*Natural*	*Total*
Disabling Injuries			
Per 1,000,000 hours worked	+10.4	+12.0	+11.5
Per 100 employees	+11.2	+12.4	+11.9
Fatalities per 100 employees	—43.8	+51.3	+4.5
Severity Rates			
Per 1,000 hours worked	—26.3	+35.0	+2.6
Per 100 employees	—25.5	+35.9	+3.8

in both branches increased relatively uniformly though the increase was somewhat higher in natural gas companies. Severity rates, on the other hand, show a divergent trend of almost equal magnitude. The severity rates for the manufactured and mixed gas companies *decreased* by 26.3 percent in terms of hours worked and 25.5 percent in terms of employees. Severity rates for natural gas companies *increased* by 35 percent and 35.9 percent respectively, accounting for the small net increase shown for the total industry. 1945 marked the first year since 1942 that severity rates for natural gas companies exceeded those for manufactured and mixed gas companies. (See chart II) A similar trend is disclosed by the comparison of fatality rates which decreased 43.8 percent in the case of manufactured and mixed gas companies but increased 51.3 percent in natural gas companies.

A comparison of actual data (as shown by chart I) rather than relative changes, discloses that the manufactured and mixed gas company frequency rate since 1940 has exceeded that for natural gas companies, this difference in 1945 amounting to 62 percent. The frequency rate for manufactured and mixed gas utilities has shown a persistent upward trend since 1938 for an aggregate increase in this period of 80 percent. The frequency rates for natural gas companies, on the other hand, have fluctuated irregularly and in 1945 were still below the 1940 rate of 14.07 notwithstanding the successive increases since the low point of 1943.

Table 4 classifies the accident experience of gas utilities by size of company for the entire industry and for the two branches. Size classifications are by four groups:

Very large—1,680,000 hours or over
Large —540,000 to 1,679,999 hours
Medium —240,000 to 539,999 hours
Small —under 240,000 hours

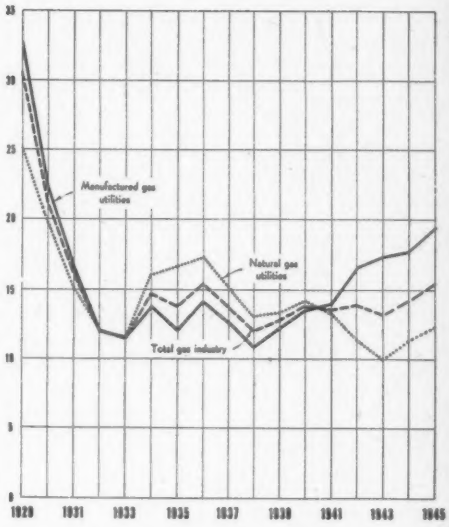


Chart I. Frequency rates (Number of disabling injuries per 1,000,000 hours worked) for gas utility industry 1929-1945

Stated in terms of employees with 2,400 man-hours per year arbitrarily considered to be equivalent to one employee, the groups are defined as:

Very large—700 employees and over
Large —225 to 699 employees
Medium —100 to 224 employees
Small —under 100 employees

TABLE IV

1945 ACCIDENT EXPERIENCE OF THE GAS UTILITY INDUSTRY IN THE UNITED STATES, BY BRANCH OF INDUSTRY AND BY SIZE OF COMPANIES*

Size Classification of Companies	*Number of Reporting Companies*	*Average Number of Employees During 1945*	*Total Number of Hours Worked by Employees During 1945*	*Number of Disabling Injuries*				*Days Charged Due to Disabling Injuries*				*Rates*	
				Fatality and Permanent Total Disability	*Permanent Partial Disability*	*Temporary Total Disability*	*Total*	*Fatality and Permanent Total Disability*	*Permanent Partial Disability*	*Temporary Total Disability*	*Total*	*Frequency*	*Severity*
Total Reporting Gas Utilities													
Total	356	94,382	207,033,091	26	92	3,157	3,275	156,000	3,819	51,247	245,066	15.82	1.18
Very large	36	63,934	140,582,257	20	56	1,889	1,965	120,000	21,879	31,064	172,943	13.98	1.23
Large	41	16,447	35,891,065	6	24	658	688	36,000	10,480	10,913	57,393	19.17	1.60
Medium	46	8,043	17,672,969	0	5	376	381	0	3,900	6,111	10,011	21.56	0.57
Small	233	5,958	12,888,800	0	7	234	241	0	1,560	3,159	4,719	18.70	0.37
Total—Medium and Small	279	14,001	30,561,769	0	12	610	622	0	5,460	9,270	14,730	20.35	0.48
Manufactured and Mixed Gas Utilities													
Total	153	43,383	94,395,038	7	59	1,780	1,846	42,000	22,653	28,024	92,677	19.56	0.98
Very large	16	28,854	62,148,056	5	38	1,071	1,114	30,000	11,258	16,577	57,835	17.92	0.93
Large	20	7,491	16,658,718	2	12	351	365	12,000	6,685	6,511	25,196	21.91	1.51
Medium	25	3,905	8,725,371	0	4	187	191	0	3,750	2,696	6,446	21.89	0.74
Small	92	3,133	6,862,893	0	5	171	176	0	960	2,240	3,200	25.65	0.47
Total—Medium and Small	117	7,038	15,588,264	0	9	358	367	0	4,710	4,936	9,646	23.54	0.62
Natural Gas Utilities													
Total	203	50,999	112,638,053	19	33	1,377	1,429	114,000	15,166	23,223	152,389	12.69	1.35
Very large	20	35,080	78,434,201	15	18	818	851	90,000	10,621	14,487	115,108	10.85	1.47
Large	21	8,956	19,232,347	4	12	307	323	24,000	3,795	4,402	32,197	16.79	1.67
Medium	21	4,138	8,945,598	0	1	189	190	0	150	3,415	3,565	21.24	0.40
Small	141	2,825	6,025,907	0	2	63	65	0	600	919	1,519	10.79	0.25
Total—Medium and Small	162	6,963	14,971,505	0	3	252	255	0	750	4,334	5,084	17.03	0.34

*See page 2 for definitions of the size classifications.

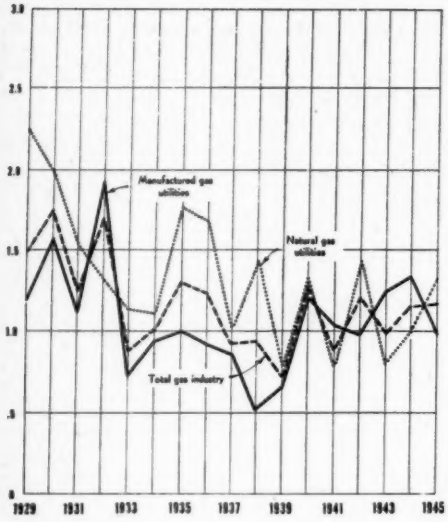


Chart II. Severity rates (Number of days charged due to disabling injuries per 1,000 hours worked) for gas utility industry 1929-1945

A study of this classification reveals that the best frequency rates for the industry as a whole in 1945 were made by the very large companies with 13.98 injuries per one million hours worked. All other size classifications were above the industry average. In severity rates, however, the best record was compiled by small companies, with 0.37 days charged for each 1,000 hours worked. Very large companies in the manufactured and mixed gas branch also had the best frequency rate with 17.92 while in the natural gas branch the best rate was shown by small companies, with 10.79. Very large companies in this branch, however, had only a slightly higher rate of 10.85. In both branches the best severity rates were made by the small companies, which reported 0.37 days charged per 1,000 hours worked in the manufactured and mixed gas branch and 0.25 days charged in the natural gas branch. Small and medium companies in both branches suffered no fatal accidents in 1945.

Natural Gas Proceedings Available

THE Natural Gas Department of the American Gas Association has announced that the 1946 Natural Gas Proceedings was published in September. Copies are available at a cost of $2.00 to members and $4.00 to non-members. Orders may be made directly to A. G. A. Headquarters, 420 Lexington Avenue, New York 17, N. Y.

Ranges For Veterans

MARC W. PENDER, director of market research for Magic Chef gas ranges, has been appointed member of a Task Force Committee, purpose of which is to provide cooking facilities for veterans' housing, according to a recent announcement of Institute of Cooking and Heating Appliance Manufacturers. Already a member of the Housing Committee of this Institute, Mr. Pender will serve as an advisor in considering ways and means of promoting the production of cooking appliances to meet the veterans' needs.

Natural Gas Brief Filed

THE Natural Gas Industry Committee which sponsored the industry's case before the Federal Power Commission's investigation filed a brief dated October 15, prepared by Wesley E. Disney and D. H. Culton of counsel to the Committee.

The brief consists of forty-two pages and is a careful analysis of the highlights of the testimony calling the Commission's attention to over-extension of present interpretation of the Natural Gas Act and making definite recommendations on a number of amendments.

Personnel Executives Meet

FOR two days, 52 industrial relations executives representing 41 gas companies and electric utility companies in 17 states recently discussed current problems. The occasion was the first joint meeting of the American Gas Association Midwest and Southwest Personnel Conference held at the DeSoto Hotel in St. Louis, November 19-20. A number of members of the A. G. A. Personnel Committee and the Edison Electric Institute Industrial Relations Committee attended the meeting.

C. C. Jolley, personnel director, Natural Gas Pipe Line Company of America and chairman, A. G. A. Midwest Personnel Conference, presided at the first day of the joint meeting which was opened by Kurwin R. Boyes, secretary, American Gas Association, who briefly outlined the history of the two regional conferences, reported on current and contemplated personnel activities of the Association and reviewed developments in the field from a national standpoint.

A summary of wage and hour laws and interpretations by Walter W. King, regional director, Wage and Hour and Public Contacts Division, Region II, formed an excellent basis for a most informative question-and-answer period which followed his talk. A timely discussion of supervisory training followed, led by W. H. Senyard, personnel director, Louisiana Power & Light Co., and vice-chairman, A. G. A. Southwest Personnel Conference, who described the effective program of his company.

A paper reviewing the purposes, methods and uses of merit rating and salary-wage administration by R. S. Collings of the United Gas Corp., Houston, Texas, started the discussion at the afternoon session of the joint meeting. The remainder of the afternoon was devoted to a round-table discussion of such matters as unionization developments, on the job training, surgical benefits in hospitalization plans, supervisory manuals, cost of living bonuses, etc.

Albert Hirsch, vice-president, The Laclede Gas Light Co., informally addressed a dinner meeting of the group on human relations in industry appropriately based on his 38 years of experience in the gas business under various kinds of supervision, graphically illustrating the effectiveness of kindness and consideration.

H. D. Carmouche, general superintendent, Houston Pipe Line Co. and chairman, A. G. A. Southwest Personnel Conference, presided on the second day of the joint meeting. An informative report on the Employee Relations Forum at the 1946 A. G. A. Convention was given by M. V. Cousins, director of personnel, United Gas Pipe Line Company.

An analysis of a number of utility contracts and a review of general labor trends was presented by E. S. Evans, secretary of the Committee on Industrial Relations of the E. E. I. As with each of the other subjects covered at the meeting, the presentation of The Administration of a Personnel Department by C. B. Boulet, director of personnel, Wisconsin Public Service Corp., formed a good background for an equally informative discussion from the floor.

The Afternoon session was devoted to the consideration of wage surveys and interpretations led by R. F. White, personnel supervisor, Southwestern Bell Telephone Company. The discussion emphasized a need for cooperative effort to relieve the burden of supplying the proper information for necessary but numerous community labor surveys. The remainder of the afternoon was devoted to a discussion of matters informally presented.

A number of the members of the A. G. A. Southwest and Midwest Personnel Conferences attended the meeting of the Industrial Relations Committee of the E. E. I. held in St. Louis, November 20, and the meeting of the Personnel Committee of the A. G. A. on November 21. The coordinated arrangements for the meetings of these four groups afforded an unusual opportunity for many gas and electric utility personnel executives to get acquainted and to review current problems in light of actual experience.

H. F. Voertmann of The Laclede Gas Light Co. was in charge of local arrangements. The hope was unanimously expressed that similar arrangements can be made yearly.

100,000 View Portland Show

APPROXIMATELY 100,000 visitors from Portland, Oregon, and its surrounding trade area, viewed the three-day Home Appliance Show, sponsored by the First National Bank of Portland in the Civic Auditorium, September 20-22. The show featured more than a score of interesting exhibits by distributors of general lines of household appliances.

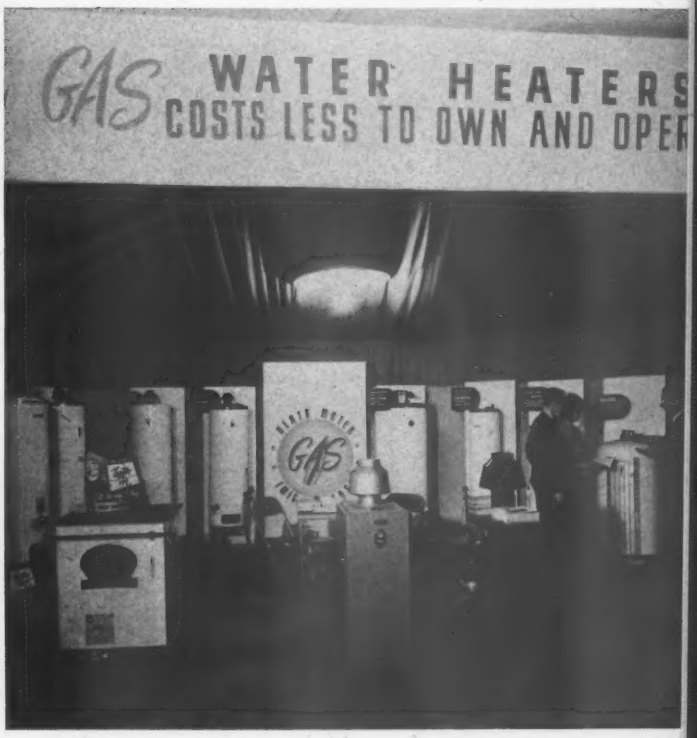
The Gas Appliance Society of Oregon had by far the largest and the most strategically located display, occupying a space of 100 feet wide by 20 feet at one entire end of the huge auditorium. Actually, the Society occupied 2000 of the auditorium's 18,000 sq.ft. of floor space.

Colorful and attended by neat, alert and well trained personnel from Portland Gas & Coke Co., and manufacturer members of the Gas Appliance Society, the 100-foot display was a constant center of attraction.

Crowds viewing the New Freedom Gas Kitchen

Part of the gas ranges on display

Servel's New Freedom Gas Kitchen



A display of gas water heaters

McCarter Award Winners

OFFICIAL recognition of their heroic actions in saving the life of a fellow worker last May was received by four employees of Cincinnati Gas & Electric Co. recently with the presentation of the American Gas Association's McCarter Medal and Certificates.

Winner of the A. G. A.'s McCarter Medal was Harless Kitts, boiler operator at the utility concern's East End Gas Works.

Mr. Kitts was the first person to apply the prone pressure method of resuscitation after Ray Langenbahn, gas maker, was overcome by carbon monoxide fumes May 12 while making repairs on a water line 35 feet above the ground at East End Gas Works.

Other persons who figured in the rescue which was affected by lowering the victim by ropes from his precarious perch 35-feet high to a safe position on the ground were Marvin Auffart, 2nd class gas maker; George McCollum, shift foreman, and Arlie Grimes, assistant operator.

Mr. Auffart received the McCarter Certificate of Assistance and Mr. McCollum and Mr. Grimes were awarded the McCarter Certificate of Recognition.

Walter C. Beckjord, president, Cincinnati Gas & Electric Co., and Milton J. Pfeiffer, manager, gas production department, made the presentations.

Harless Kitts receives the McCarter Medal and Certificate at his home from Milton J. Pfeiffer, manager, gas production department, Cincinnati Gas & Electric Company

Milton J. Pfeiffer, manager, gas production department, left, looks on as Marvin Auffart, Arlie Grimes, and George McCollum receive McCarter Certificates from Walter C. Beckjord, Cincinnati Gas & Electric Company president

European Gas Development

BACK from a four weeks' trip to England and the Continent, John B. O'Connor, executive vice-president of Dresser Industries, Inc., has reported a sizable gas field development under way in Southern France and considerable activity in Czechoslovakia where he had occasion to visit a large coal gasification plant where both synthetic gasoline and fuel oil are being made by reducing coal with oxygen. This plant is also producing relatively high B.t.u. gas from coal and piping it directly from the generators into Prague, a distance of about 100 miles.

Shortage of solid fuels in France is providing the impetus to exploration and active development of gas fields south and west of Toulouse, he declared.

"Structure of the new fields was worked out in 1937 and the first well brought in early in January, 1939," he said. "Today, with the war behind them, the French, through a company financed jointly by government and private capital, have completed a 12-inch pipeline to Toulouse, a 5-inch line to Tarbes, and have others under construction to neighboring industrial centers."

Convention Calendar

DECEMBER

2-4 •Institute Cooking & Heating Appliance Manufacturers, Netherland Plaza Hotel, Cincinnati.
2-6 •American Society of Mechanical Engineers, New York, N. Y.
2-6 •National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, N. Y.
6-7 •Liquefied Petroleum Gas Association Appliance Committees, Hotel Cleveland, Cleveland.
9 •Mid-West Regional Gas Sales Council, Congress Hotel, Chicago.
19-20 •Joint A. G. A. Personnel Committee–E.E.I. Industrial Relations Committee, Hotel Pennsylvania, N. Y.

1947

JANUARY

20-23 •A. G. A. Home Service Workshop, Netherland Plaza Hotel, Cincinnati.
24 •Midwest Industrial Gas Council, Stevens Hotel, Chicago, Ill.
27-31 •Seventh International Heating and Ventilating Exposition, Lakeside Hall, Cleveland, Ohio.

FEBRUARY

13-14 •A. G. A. Residential Gas Section, Eastern Natural Gas Sales Conference, Roosevelt Hotel, Pittsburgh.

MARCH

17-18 •A. G. A. Residential Gas Section, Mid-West Gas Sales Conference, Edgewater Beach Hotel, Chicago.
20-21 •New England Gas Association, Annual Convention, Boston, Mass.
25-27 •National Restaurant Association Convention, Stevens Hotel, Cleveland (A. G. A. will Exhibit).

APRIL

7-9 •A. G. A.–E. E. I. Accounting Conference, Hotel Statler, Buffalo, N. Y.
14-16 •G.A.M.A. Annual Meeting, Drake Hotel, Chicago.
14-16 •A. G. A. Distribution and Motor Vehicle Conference, Hotel Cleveland, Cleveland, Ohio.
16-18 •Southern Gas Association, Biloxi, Miss.
25-26 •Gas Meters Association of Florida-Georgia Annual Meeting, Boca Raton, Fla.

MAY

Apr. 30-May 1-2 •A. G. A. Natural Gas Department Spring Meeting, Stevens Hotel, Chicago.
15-16 •Indiana Gas Association, French Lick Springs Hotel, French Lick.
20-22 •Pennsylvania Gas Association, Wernersville, Pa.

JUNE

2-4 •Joint Production and Chemical Committee Conference, Hotel New Yorker, N. Y.
9-11 •Canadian Gas Association, General Brock Hotel, Niagara Falls, Ontario.
23-24 •Residential Gas Section, N. Y.–N. J. Sales Conference, Essex and Sussex Hotel, Spring Lake, N. J.

Accounting Section

L. V. WATKINS, Chairman JOHN A. WILLIAMS, Vice-Chairman WALTER E. CAINE, Secretary

Improving Customer Relations

BY L. A. HORTON*

St. Louis County Gas Company, St. Louis, Mo.

ALTHOUGH there are many reasons for training employees, only one reason is suggested by the topic "Improving Customer Relations Through Employee Training." It is not contended that improving customer relations is necessarily the most compelling reason for training employees as other reasons such as promoting higher standards of employee efficiency, providing for future leadership, improving employee morale; all are highly important in their own right. Although the topic at first seems limited by this view, by reflecting a moment we will see that all employee training, whatever its primary purpose, has a direct collateral bearing on customer relations. This is why serving our customers is the basic purpose of all of our business activity and customers expect us to serve them economically as well as cordially. Employee training which improves the efficiency of any part of our operations, is therefore certain, ultimately, to improve customer relations.

It seems clear then that *all* employee training has a bearing on customer relations. However, for the sake of brevity and thoroughness in this report, your committee has not concerned itself so much with the meager instructions necessary to enable an employee to do a simple job, but instead has assumed that real training begins where such meager instruction ends.

Reasons for Employee Training

Before entering into a discussion of additional training, we might stop a moment to consider whether added training is really necessary, what purpose it can serve and how much training time and cost can be justified. The objectives sought and the amount invested in employee training naturally would vary with the type of work done. In considering such variations, perhaps we should start with the thought that our industry itself differs from other industries and this difference is one of the important points to be considered in an approach to employee training which is intended to improve customer relations. Our industry is monopolistic, our commodity is intangible, and we serve more customers than we can know personally. We know that monopoly, in our type of business, benefits the customer—but most customers do not know this. We know our commodity can be measured as accurately as any other commodity—but customers are not so sure. We know that we are just as interested in the three hundred thousandth customer as we are in the first—but the customer has to be shown.

Because our business and our product are unusual, it is understandable that many customers are uninformed, or misinformed about us. Since suspicion, like superstition, is rooted in ignorance, the utility industry, perhaps more than any other, needs employees who are sufficiently well trained to be capable of replacing customer suspicion with understanding and confidence.

Even though our industry is monopolistic, we are all acutely aware that "monopoly" is not a synonym for "non-competitive." Many utilities compete with another utility. Gas and electricity are in direct competition with one another in supplying many of the services in the home. We are also in direct competition with the suppliers of coal, oil and other products which can be used as a substitute for our service. Indirectly we must compete with all products of all industry and the competition for consumer dollars is very keen. If we were delivering to customers only their minimum utility requirements which they could not satisfy in any other way, we would have only a fraction of our present sales volume. If we would be content to rely on "monopoly" to bring future business to us, we would stagnate overnight.

And there is still another phase of competition to be considered. All private enterprise is today in active competition with various foreign "isms," such as communism and socialism. We, in the utility industry have an exceptional stake in the outcome of this competition since our business is among the first to be selected for social experimentation.

In addition to these challenging competitive conditions there is another factor which cannot safely be omitted from the list of reasons for employee training. Those are the changes in employee attitude which have taken place during the past decade. We can all remember the conditions of the dead past when employees depended largely on their own individual energy, ambition, and resourcefulness to master their jobs and to earn the right of being selected for advancement. In most companies the spur of individual recognition has been partly substituted for by group security on the present job and by seniority controls over promotions. Under those conditions even mediocre employees can depend on seniority to carry them to the highest levels under the jurisdiction of the labor agreement. Since this means there is less incentive for employees to train themselves, there is more incentive for management to supply the training needed.

All of these peculiarities of our industry, competitive conditions and evolutionary changes in employee attitudes have a great deal to do with the desirability, or more particularly the necessity of maintaining well trained employee organizations.

Possibilities Through Training

We have seen that monopoly, even though it is the product of economic laws and operates in the public interest, nevertheless does deprive the customer of a choice of whom he will do business with. But it is no penalty to continue dealing at the same store if that is where we want to deal. Clearly then, it is up to the utility industry to make our customers want to do business with us. There is no other way to accomplish that objective than through our having well trained employees.

We have seen that the intangibility of our product deprives us of customer confidence and understanding in any natural or automatic sort of way. However, what the customer buys is not a certain number of cubic feet of an invisible substance—what he really buys is a plentiful supply of hot water, a comfortably heated home, safe storage of his food, and uniform cooking results with a minimum of effort. When employees can convince the user that he is getting his money's worth of such services—is getting a bargain—the customer isn't going to worry about kilowatt hours, cubic feet or therms or whatever else we might call our billing unit.

A few moments ago we observed that it is a physical impossibility to know all of our customers personally; that the corner grocer has an advantage we cannot match. If we would leave the operation of our business to untrained or inadequately trained employees,

* Presented at the 28th Annual Convention of the American Gas Association, Atlantic City, October 7-11.

this would be a millstone around the neck of our customer relations. However, a carefully selected and fully trained employee can soon make Mrs. Jones know that her individual personality is recognized here just as much as at the corner store, can make her feel that we are just as anxious to earn her approval and merit her patronage as if there were a competing utility across the street. It takes a considerable amount of skill for an employee to do this and the average employee today is not automatically endowed by nature with that ability. But the employee can be taught and it is up to the company to provide the teaching.

We also remarked about the trend in employee attitude during the past decade or so. In most organizations it would be a mistake to assume that employees have as much company loyalty or as much incentive to do an outstanding job as they formerly had. But personal pride and the desire for the approval of our fellow beings are such deep-rooted instincts in human nature that they have not been eradicated by events of recent years. Further, employees have a selfish incentive to master the art of getting along with people; they can use the accomplishment in every activity of their social lives. And all of our employees can be led to realize that their future success is pretty closely related to the success of their company, so they have a direct, personal interest in the company's welfare. Because it is human nature to want to be on a winning team, because every individual aspires to the plaudits of his team-mates, we still have plenty of employee incentive awaiting our training efforts.

As far as competition is concerned, if we do the employee training job which can be done, we won't have to worry about keeping up with the other industries. We can make them worry about keeping up with us. It is this driving force of constructive competition which makes our system of enterprise the most successful ever invented, and with it operating in high gear we will not have to fear the competition of foreign "isms."

If our continued existence and future growth can now be assumed to be closely linked with well trained employees, our next question deals with the proper scope and the best methods of training our people. What employees need to be trained, what kind of training they should have, how much training is justified—all such questions are easier to ask than to answer.

Questionnaire Used

Your committee thought that the best approach to the problem would be to find out by means of a questionnaire what training is now being done in our industry. The questionnaire form used sought information on such phases of the training question as when training is given, what subjects are covered, who prepares the material, who does the instructing, what equipment is used, are the class sessions on company time or employee's time, the length of such sessions, are tests given, if so what use is made of test grades, how many hours per employee year are spent in training, and whether night school and correspondence school courses are encouraged by refund of all or part of the employee's tuition.

Information on these points was sought separately for three employee groups. The first group was composed of those employees whose work does not bring them into contact with customers personally, but the product of their work establishes a link with customers through such communications as bills, notices, etc. The second group included employees who contact customers incidental to the performance of some other duty such as cashiering, meter reading and service work. The third group was composed of employees whose principal work is communicating with customers, either in person or by means of the telephone or letters.

While the number of replies to the questionnaires was small and consequently did not furnish a complete picture of the industry's employee training program, the response we did receive represents utilities serving nearly four million customers and, therefore, should provide a fair cross-section.

The returns were analyzed in an effort to select the best elements of each company program and to incorporate them into a composite training plan generally suitable for all member companies. From the information thus assembled, your committee offers the following recommendations. These recommendations are not in the nature of a fixed formula, as many employee training problems are affected by local conditions, and the training of employees is more nearly an art than a science.

We do not recommend then that every company adopt every point which we will refer to, but we do suggest that every point be seriously considered and that each be adopted unless there is good reason to sacrifice the advantages it offers.

Train All Employees

It is the committee's recommendation that every new employee be given some training in addition to that which is required to handle the mechanics of his immediate job. We do not mean to detract from the importance of so-called job training; in fact we believe that a carefully planned and thoroughly applied job training program deserves even more emphasis than it has been given. In this connection, companies which are not already familiar with the Training Within Industry Program which was sponsored by the War Production Board are encouraged to consider its application to their needs. A number of companies which have used this method of training have found that it is ideally suited to jobs having fixed routines and that its principles can readily be adapted to all or major portions of other types of work.

What we are primarily concerned with, however, is the method of teaching which treats the employee not as an isolated unit functioning as an appliance owned by the company, but instead as an essential part of the human organization which *is* the company. Every employee has a circle of neighbors, relatives and friends who obtain through him a large part of their impressions of the company. Within this area of each employee's influence, the interest he will take in representing the company will depend to a large degree on the interest the company takes in him. Customer relations are not alone the product of the Advertising Department and other groups dealing directly with customers. They are the sum total of everything the company does or fails to do which makes an impression on customers. Our companies have made liberal expenditures on promotional and institutional advertising in the hope that it will improve a little the general impression our customers have of us. We should be sure that the specific impressions made by our employees uphold and further, certainly not belie, the impressions we have endeavored to create through this advertising effort.

In addition to the direct effect employee training has on customer relations, there is an indirect effect on worker efficiency. Modern thinking about worker psychology is that the production of the average employee is substantially influenced by the amount he *wants* to produce. Although there are some influences which work toward a limitation of worker output, this is no reason why we should resign ourselves to diminishing results; it is all the more reason why we should see that the most is made of the incentives we do have to offer.

New Employees

The incentive produced by a feeling of common purpose with the company, a feeling of "belonging," or matched identity, can be heightened by properly indoctrinating all new employees. Such initial information should include a brief history of the origin and development of the utility industry. When properly presented, the story of the utility industry's early struggles, the series of challenges which have since occurred and the success the industry has had in overcoming these obstacles and amazingly expanding its services to the public, affords dramatic first impressions for the new employee. A little information about the background of the workers' own company, about its products and their uses, about the company's departmental organization, and about some of its broad policies, practices and objectives, can be presented in a short time but will long be remembered. Certainly each employee should also be shown how his individual job relates to the whole job of supplying a vital service to the community.

For a physical worker the indoctrination procedure may be the last formal training he will receive, but it is expected that the flame of allegiance will be kept burning through the media of his supervisors, through the company magazine, the annual report to stockholders and employees, and other related activities.

Employees who are in line for promotion should be encouraged to prepare to qualify for promotion. This might include job rotation planned by the supervisor to be sure the employee is familiar with all job operations at his current level before advancing to the

next higher level. We recommend that it also include the refund of part or all of an employee's tuition to a night or correspondence school provided the course is approved in advance as being in line with the employee's present work or probable future work and provided the course is satisfactorily completed.

At the time of promotion, an employee is particularly receptive to information about his company. Arrangements for promotion should, therefore, include supplying information to the employee which will give him a broader understanding of his company and its operations.

Indirect Contact Employees

Employees who do not have an opportunity to deal directly with customers but who do have a part in preparing communications which are mailed to customers are entitled to somewhat more extensive training than physical workers. Since the standards of accuracy and neatness in their work have an important influence on what customers think of us, such employees will be benefited by at least a synopsis of our customer relations program. Employees' interest in their prosaic work is often quickened by the knowledge that they play a part in their company's public relations. Brief accounts of specific cases in which customer good will was improved or impaired, as a result of careful or careless work by behind-the-scenes employees, are often an excellent aid in developing incentive to do the best possible work.

Standard practice manuals also have been found helpful in improving the quantity and quality of work. If the job of instructing a new clerk is simply delegated to an experienced clerk, a poor result may be obtained no matter how conscientiously this "breaking-in" is handled. This is because the experienced clerk may not have a perfect understanding of the job herself, she may forget to explain a few little elements of the work, the green clerk may misunderstand some of the explanations and may forget some of what she is told. Without some automatic check on such possibilities, performance is likely to degenerate each time the job is passed from one clerk to another. Poor results impose a burden on supervisory time and, due to the press of other matters, spur-of-the-moment corrections are almost always limited to the one fault discovered instead of determining how many other faults there are. This method requires additional piece-meal effort each time additional faults are discovered.

It does take a large amount of time to prepare standard practice books but results pay an excellent return on the time invested. Such manuals should supply each worker with a clear explanation of each operation she performs, covering what to do, how to do it, and at least a little information about why it is done that way. An experienced clerk, using the manual as a guide in breaking in a new clerk, can be sure none of the unusual aspects of the job is overlooked. Later if the new clerk is uncertain of the course to be followed, she has officially approved information readily available for her guidance. There is no excuse for her to take a chance and there is no need for her to interrupt others with questions.

The manual also provides an excellent basis for advance training of employees to fill anticipated vacancies and it furnishes leads for questions for oral or written tests to establish an employee's fitness before she is put "on her own." Thereafter it is a valuable aid when substitutions must be made, such as during the vacation season and particularly those occasioned by unexpected illness. Even an employee who has performed a certain job at sometime in the past may, on reassignment to this job, need a brief review before complete familiarity is regained. Most companies using such manuals consider them one of their most important supervisory tools.

Secondary Contact Employees

Employees who meet and talk with customers in incidental connection with some other specific work such as meter reading, cashiering, appliance repairs, etc., are usually given adequate training for the primary or mechanical part of their jobs. Too often though we rely upon "common sense" and "long experience with the company" to provide the employee with all of the information, tact and diplomacy required for first-class customer contacts. A service man who is a wizard with wrench and screw-driver but who is inept in his necessary conversations with customers, leaves more lasting impressions of his bad qualities than his good ones. The meter reader who seldom makes a mistake in reading customers' meters but who is grumpy in his contacts, will create less goodwill by his knowledge of meter dials than he will destroy through his ignorance of human nature. The standards of our physical services have become so high that improvement is bound to be less noticeable in the future. The big opportunity now lies in improving the quality of our personal services. Because of this, employees doing work which brings them into personal contact with customers need fully as much training in "humanics" as in mechanics.

Human Relations Course

If the employee training had to be neglected during the war years, the committee recommends an intensive, compact training course now to act as a rejuvenator and to establish a good foundation for follow-up training. One company is now doing this with a course which they call "Fundamentals of Good Human Relations."

The Human Relations course referred to is an excellent series of two-hour sessions for small groups of 10 to 15 employees. The first meeting is opened by one of the principal officers of the company with an explanation of the reasons the company places a high value on good customer relations. The Advertising Manager exhibits charts of the results of customer opinion polls and describes the improvements the company hopes to make in their efforts to mold public opinion. This leads into an explanation of the necessity to live right first and then tell the public how you live. In this way employees are told how the standard of their own individual service to customers controls the standards the company can advertise to customers. To encourage employees to make the most of the opportunities to be afforded by the subsequent class sessions, it is pointed out that skill in handling human relations will make their jobs more pleasant, will serve them in their

Things You'll Soon Forget

HOWARD W. NEWTON
Vice-President, J. M. Mathes, Inc.

Before you can give people an urge to buy, you have to give them an urge to read.

* * *

Readers are more interested in the product that came out of the research than in the research that went into the product.

* * *

Circulation deals with the number of impressions on *paper—copywriting* with the number of impressions on *people.*

* * *

It's one thing to catch *a reader's eye —quite another to* hold *his interest.*

You may be hired to write copy—but you're paid to produce ideas.

* * *

People are more likely to get what you sell if they get what you mean.

* * *

Sometimes murdering the King's English is justifiable homicide.

* * *

You can always exhaust a reader before you exhaust a subject.

* * *

The soundness of your ideas is more important than the sound of your words.

* * *

You would never overwrite an ad, if you had to underwrite its cost.

Advertising & Selling

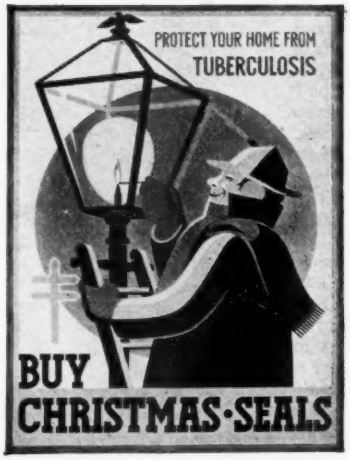
private lives, will increase the company's growth and thereby expand their own individual opportunities, and will give them the satisfaction of being associated with an organization that is highly regarded by their neighbors and friends.

Subsequent class sessions are conducted by professors from a local university who are recognized experts in the fields of good speech habits and applied psychology. While a study of such subjects cannot be completely covered in a few class sessions, a résumé of them with case studies and a discussion of do's and don't's does make the employee conscious of many of his shortcomings and the results obtained are convincing. In the sessions covering habits of good speech the instructor encourages conversation and carefully criticizes improper enunciation and use of words. Each employee has his voice recorded and then listens to it as others hear it. For those employees who write letters, sessions on business letter writing are included. All phases of the courses are illustrated with actual cases taken from the experiences of employees doing the same type of work as the employees in each class group. A final meeting is reserved for a review of the highlights of the courses and how the employee will benefit by full use of the training he has been given.

The follow-up training of distinctive groups is handled by the employees' regular supervisors. As an example, the Meter Reading Division in that company has a manual which briefly reviews working rules and deals extensively with the customer contact phase of their work. The latter information ranges from suggestions about presenting a pleasing appearance, to various company policies and practices which customers often ask meter readers about. The Meter Reading Supervisor works closely with supervisors of other customer contact groups for maximum co-ordination of efforts. This company is fortunate in having a wage scale which enables meter readers to progress beyond the normal top step of the wage range, provided they show by written test and by actual performance, that they have superior ability in both the mechanical and customer relations aspects of their jobs. This wage incentive is reported to have made employees more anxious to acquire the information they need, and to apply themselves to their work more diligently than they had prior to the establishment of the incentive wage.

Primary Contact Employees

Employees whose principal duties are the handling of customers' complaints, inquiries and requests need even more extensive training. To most of our customers the delivery and use of our service is so automatic and reliable that little or no thought is given to the organization which supplies that constant flow. But when something unusual occurs, when a bill seems too high, when the customer is uncertain what he should do before leaving on vacation, when he wants to make arrangements for moving or when any of a hundred other uncommon situations arise, he will be impressed, favorably or unfavorably by the degree of efficiency and courtesy we display. The impressions gained on these occasions usually are magnified in the customer's mind so that they become his opinion of our whole organization and its service.



Employees who spend most of their time talking to our customers need information of various kinds—psychological, mechanical, mathematical, organizational, theoretical, and some of a purely background nature. Theory and background are sometimes considered impractical elements of an employee training course. The usefulness of theory and background, although not readily evident, is nevertheless real. More salesmanship is required to sell a customer on the idea that his bill is not too high than is required to sell an appliance. Before any salesman can sell someone else, he must first be sold himself. When an employee undertakes to "sell" a complaining customer, he may not have occasion to use directly what he has learned from his training in theory and background, but his mental poise, the conviction that he puts in his voice and his general resourcefulness will be immeasurably fortified by the self assurance which results from such training.

A complete course of training for primary contact employees should include a study of the following: an extensive history of the industry and of the local company; how our products are made, distributed and measured, with emphasis placed on controls over continuity and regulation; company organization and the nature of work handled by each department, particularly that work which bears on the services supplied or bills rendered to customers; the company credit and collection policies including the reasons behind the policies; peculiarities of public utility economics; the theory and application of rates; a review of psychological principles applying to customer contact work, including liberal illustrations from the daily work to show the application of each principle; proper voice control; good speech habits; letter writing for those who dictate messages to customers; the utilization of our service by customers, coupled with a study and inspection of appliances; and general information covering the miscellaneous matters with which the employee should be familiar if he is to capably handle random complaints and inquiries.

Training Equipment

The most effective method of teaching many of these subjects requires charts, illustrations and sample pieces of equipment. Inspection tours to company properties also prove helpful. A voice-recording device is an invaluable aid in voice training. The use of films or slides, with or without sound recording, is becoming popular in employee training. Large companies sometimes prefer to make their own films, but a number of good films are available at little or no cost from various national organizations. The American Gas Association has a sales training program, supported by films, a portion of which is a training course on the fundamentals of good human relations. The Eastman Kodak Company offers to supply free, their booklet entitled "The Index of Training Films."

Training Schedules

Practically all companies train employees on company time and make attendance compulsory. Experience indicates classes should be small enough for maximum individual participation in the discussions. The duration of class periods has an important bearing on the level of attention maintained and indications are that two hours should be the maximum. Even then, a five minute "stretch" in the middle of the period helps to prevent fatigue. If conditions will permit scheduling class sessions the first thing in the morning, the employee's mind is fresher and more open to new ideas at that time of day. Meetings at weekly intervals seem most popular for intensive training courses.

To stimulate employees' attention, tests or examinations should be given. The manner in which employee grades are used will differ according to the wage and promotion policies of the company. The general feeling is that such grades are a legitimate consideration in establishing an employee's fitness in his present work or for promotion.

Follow-Up Training

No matter how thorough the initial training, the program is not complete without a suitable follow-up. Employee habits usually are so deeply ingrained that total displacement does not occur within the initial training period. Usually the employee wants to maintain his improved speech, wants to apply the good psychology he has learned, but subconsciously he will drift away from them unless they are kept before his attention.

The follow-up job can best be done by immediate supervisors. There are various successful ways to keep employees on their toes, all of which can be used in a way which gives the employee the feeling that the sole intention is to help him do the good job he wants to do, as contrasted with the approach of criticizing the employee for his failures. The use of telephone monitoring sets provides material for individual or group discussions about voice control, good grammar and

(Continued on page 559)

Our First Postwar Year

BY JOHN J. QUINN

General Sales Manager, Boston Consolidated Gas Co., Boston, Mass.

John J. Quinn

DURING this past year, the first year of peace since tragic Pearl Harbor, the Residential Gas Section of the American Gas Association has found itself in the same position as that of our utilities, manufacturers, and appliance dealers. With very little or no merchandise with which to meet the already delayed needs of our customers or to meet the new and greater opportunities now with us in new housing, and with other handicaps with which all are familiar, the old yardstick of appliance sales is no longer available as a device for measuring results. None the less, our sectional committees have been constructively active and tangible evidence of their work is before us.

There are twelve sectional committees this year and the chairman and committee members, without exception, applied their best thought and effort to the needs of our industry, within the scope of their varied assignments. To pick out one of these activities and place it before another in relative importance would be as unfair as it would be inaccurate. No single assignment can be regarded in an indifferent light or as of lesser importance than another, and it was in this spirit that all assignments have been carried out. Never was a chairman more loyally supported by those who made up the committees and for this cooperation it is fitting here and now for me to express my deepest appreciation.

Inasmuch as this is our first sectional meeting in five years, it seems to be in order to refresh our memories on the nature and make-up of the Managing Committee and the twelve constituent committees. Altogether more than two hundred individuals have participated in Residential Section committee work this year.

The Residential Section Managing Committee is made up of members at large (who are sales executives from utilities in manufactured, natural and mixed gas areas), the committee chairman, and representatives from each of the Associations affiliated with the A. G. A. All geographic areas are represented. The name of each committee indicates its purpose and objectives.

In alphabetical order, the first activity to claim attention is that of the Appliance Financing Committee, under the capable chairmanship of H. W. Nichols, Rochester Gas and Electric Company. This committee is engaged in a far-reaching survey of appliance financing practices and potential requirements in this regard of member utilities and dealers. The results will be completed and distributed early in the new association year and promise to be of practical assistance to utilities and dealers in effectively meeting changed postwar conditions.

Under the experienced and sincere leadership of H. S. Christman, Philadelphia Gas Works Company, a new committee was established this year on Dealer Relations. From this committee will shortly come the first complete report on dealer policies and programs now in effect or soon to be established. The survey on which the forthcoming report will be based will cover all sections and all types of distributive and merchandising practices. A dramatization of this subject was presented by Mr. Christman and the Cuthrell Players at the annual convention. The importance to our industry of increasing dealer interest in the adequate merchandising of quality gas appliances is recognized on every hand. The work of this committee will be of great value to utilities, dealer associates, and gas appliance manufacturers.

Address of the 1945-1946 Chairman at the 28th Annual Convention

Ever in our hearts, as we hope we are in theirs, come the Home Service girls. This year's chairman is a fellow New Englander and director of Home Service for our neighboring utility, Mrs. Lillian Dunbar, Cambridge Gas Light Company. As always, this committee has carried on in a most competent manner and our industry is again indebted to Home Service for loyal, constructive interest, always in evidence in the programs that are devised and carried out by this group.

This committee sponsored a series of well-attended regional Workshops throughout the country. These will be continued in 1947. Three home service booklets were completed and have received wide industry acceptance. These booklets were:

1. A planning booklet for school kitchens, "Modern Kitchens for Home-making Instruction"

and 2/3 School text books for "Training for Home Service as a Career."

Books in Preparation

Additional booklets on Home Service work will be prepared next year. Our compliments to Home Service for a continuous performance of good public relations and selling that contributes immeasurably to improved customer appreciation of modern gas service. This is subtle selling at its best.

Early in this Association year, the committee on House Heating and Air Conditioning was discouraged. Its capable chairman, Raymond Little, Equitable Gas Company, and his fellow members could see the immediate need for industry action on an upgrading program for heating installations and equipment. Their voices were raised, but it seemed to them as though they were but "crying in the wilderness." There was no answering call. But not to be put aside, they continued with thoughtful planning and as the months passed, it became clear that our industry was recognizing this need for immediate and concerted action. No longer was the problem divided, as between natural and manufactured gas areas. The situation being faced was common to all. It is clearly set forth in a just-off-the press bulletin from this committee, entitled, "What about Gas House Heating?" Because action is necessary and at once, and the thoughts expressed are so sound, I will close my comments on this committee's work with the following quotation from the booklet with the big red question mark:

"Over the years the gas industry has ex-

pended hundreds of thousands of dollars to develop customer acceptance of gas for house heating. As a result the gas industry holds a position of respect and leadership in the heating field both from the standpoint of the manufacturer and the utility. The best evidence of this is the fact that demands for gas heating are greater than ever. This indicates consumer confidence and satisfaction and if we are to continue to deserve this confidence continued leadership must be maintained.

"Clear thinking seems to indicate that the increased consumer acceptance for gas house heating is a signal for *immediate action toward the development of an effective program.* Your committee will soon recommend to the industry the adoption of a program specifically designed to educate the consumer, the heating trade, the architect and builder in respect to the necessity for maintaining high-grade standards for house heating with gas."

Gas Service Manual

Another important goal attained during the year has been the completion and publication of the "Manual of Modern Gas Service." This is a complete, attractive handbook on installation of modern gas service and appliances prepared specifically for architects, builders, and others interested in the building field.

This project was started in 1943 by the Committee on Housing of which Leon Ourusoff, Washington Gas Light Company is chairman. The project was handled by the subcommittee on Publicity and Specification, Chairman H. P. Morehouse, Public Service Company of New Jersey. Mr. Morehouse is now chairman of the Housing Committee. The manual has been acclaimed as one of the most effective promotional factors in assuring that specifications will provide for adequate gas service and modern gas appliances in home construction. The Housing Committee is closely coordinating its activities with the various private and governmental housing agencies, prefabricated home manufacturers and particularly at this time with the Wyatt National Housing program. It will continue the necessary work on the Manual so as to assure its being kept up-to-date. In this particular respect, our appliance and equipment manufacturers can be of great assistance.

The Committee on Improving Domestic Gas Appliances has completed the arduous task of revising the original "CP" gas range requirements so as to assure even better "CP" Ranges. These revisions have also been approved by the "CP" Range Division of the Gas Appliance Manufacturers Association. The new requirements will result in "CP" gas ranges with increased efficiency, better over-all performance, greatly improved customer convenience and satisfaction. The industry is indebted to Chairman F. M. Rosenkrans, Gas Service Company, Kansas City, committee members and "CP" range manufacturers for another job well done.

This committee will now focus attention on other domestic gas appliances, particularly the requirements for water heaters so that these may be revised as necessary to assure any needed upgrading.

Tying in with the above, the Water Heating Committee, W. J. Schmidt, Long Island Light Co., chairman, is now concentrating on a program of improvements and promotion for automatic gas water heaters analogous to the "CP" gas range program. Water heater manufacturers will be called upon for water heaters designed to meet specified performance standards that will assure maximum customer satisfaction. No more profitable opportunity is open to our industry than that of water heating and particularly so with the growing acceptance and active interest on the part of customers in automatic washing devices for laundry and kitchen.

In this connection it is worthy of note that through the Promotional Bureau of our association, we now have available valuable water heating promotional material and more will follow. Of course the natural question in this as in similar situations is, "Where are the Water Heaters?"

The New Freedom Gas Kitchen program has become the spearhead of the residential market drive to maintain and increase the usefulness of gas service and gas appliances in the American home. This important committee was under the chairmanship of Wallace M. Chamberlain, Michigan Consolidated Gas Company, who was vice-chairman and is now chairman-elect of the Residential Section. The impact of this program and its ever-increasing momentum is proving to be a vital sales tool in our progress. To the farsighted men who initiated and then carried through the program decided upon, goes forth the gratitude of all. The director of the New Freedom Kitchen Bureau, H. Vinton Potter, has done a commendable job of stimulation and betterment of allied-industry relations.

To Revive Committees

Among the most stimulating activities of the Residential Section in the days before World War II were those of the Domestic Range and Refrigeration Committees. Both of these have been war casualties in so far as immediate sales stimulation is concerned, but both committees have carefully reviewed plans for the revival of promotions for the popular regional and national sales contests. This is contemplated as soon as appliance production appears to have caught up with demand.

For the Domestic Range Committee, J. W. Lea, Atlanta Gas Company, was chairman, and the Refrigeration Committee chairman was R. J. Vandergriff, Laclede Gas Light Company. From the work done by both of these men and their committee associates, future committees, and through them our entire industry, will reap benefits. Both committees have the confidence and support of manufacturers and evidence of this practical cooperation is to be seen at this convention in the "CP" range promotional spots. Further evidence in both committees is to be found in the extensive Residential Section tour of meetings carried on in the previous year, and in which both committees and manufacturers cooperated.

After several years of effort and in the face of many war-time and postwar handicaps the Committee on Selection and Training of Sales Personnel, under the efficient and able leadership of R. E. Williams, Binghamton Gas Works, chairman, there have been completed two training courses:

1. "Fundamentals of the Gas Industry."
2. "Residential Gas Salesmanship."

These courses are complete with manuals for students and instructors, sound slide films, etc. These are now being utilized by member gas companies for the training of their own and dealer personnel.

In conclusion it may be said that in the five history-making years that have passed since the gas industry last met at Atlantic City, much has been accomplished by our Residential Section, utility members, and appliance manufacturers. Under critical war-imposed restrictions and often apparently insurmountable difficulties, both war production and civilian requirements have been superbly met. Now despite the problems of reconversion, equally great or greater in magnitude than those of war-time, we saw in the splendid appliance exhibit in Atlantic City's mammoth auditorium many new appliances and a great many other improvements in facility and design, all of which are most encouraging.

"CP" Water Heater Proposed Requirements

AT a recent meeting of the Water Heating Committee of the American Gas Association, under the chairmanship of W. J. Schmidt, Long Island Lighting Co., Mineola, N. Y., recommendations for proposed "CP" gas water heater requirements were set up. The problem of improving automatic gas water heaters is being approached on a functional or performance basis with details of construction left to the manufacturers. Installation practice will be decided by the local gas companies.

Following are the proposed requirements:

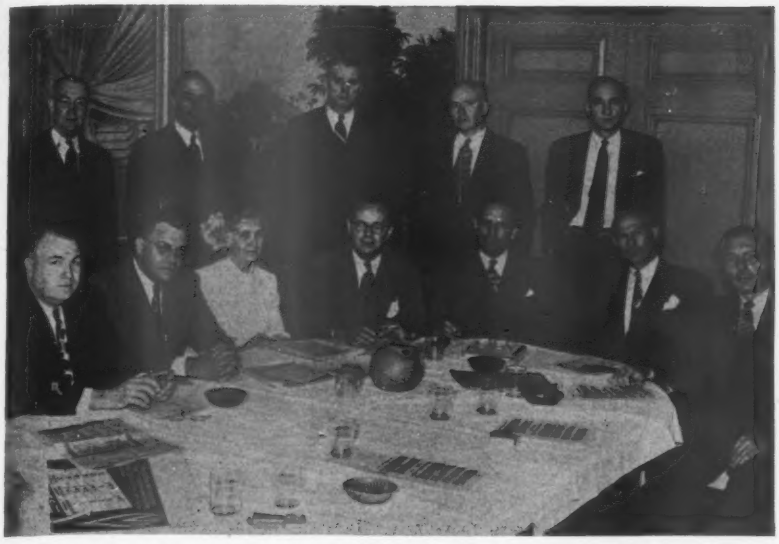
1. A "CP" water heater must at all times meet the current A. G. A. minimum requirements prescribed for construction and performance.

2. Such a heater must supply a minimum of 60 gallons of 160 degree water at the heater in the first hour of draw.

3. Item number 2 shall be attained with an overall service efficiency of not less than 70 percent at the heater.

4. The heater must prevent excessive temperature drops due to turbulence, and must be capable of delivering 70 percent of its full tank capacity with a maximum drop of five degrees in water temperature. (In other words minimum temperature should not fall below 155° F.)

5. The heater must be equipped with a carefully calibrated thermostatic control accurate within limits of seven percent plus or minus. Such thermostatic control must be located to provide ready, accurate and convenient adjustment by the user.



At the American Gas Association Water Heating Committee meeting held recently, are, standing left to right: E. M. Rowland, Denver, Colo.; R. G. Munroe, Denver; W. D. Williams, Newark, N. J.; J. R. Lavelle, Conshohocken, Pa.; and F. E. Clifford, Cleveland, Ohio. Seated are: G. B. Buck, Denver; H. E. Handley, Jackson, Mich.; Mary N. Hall, Elizabeth, N. J.; F. W. Williams, New York; Committee Chairman W. J. Schmidt, Mineola, N. Y.; Clyde H. Potter, Los Angeles, Calif.; and Frank McFerran, Pittsburgh

6. The heater must deliver clean, full hot water service at the highest temperatures required for the modern home during the period of the manufacturers' warranty.

7. In the event of tank failure on any heater during the period of the manufacturer's warranty, the manufacturer shall replace the entire heater on a "no charge basis" F.O.B. destination which shall be interpreted to mean the regular delivery point where the Utility or dealer accepts his factory shipments.

These requirements are now under consideration by the Water Heating Division of the Gas Appliance Manufacturers Association.

At the same meeting, a subcommittee consisting of C. H. Potter, Southern Counties Gas Co., Los Angeles; W. D. Williams, Public Service Gas and Electric Co., Newark; C. R. Davis, Birmingham Gas Co., and Claude Ballinger, Republic Heater Co., Huntington Park, Calif., was appointed to look into the possibility of developing a national chart for the adequate sizing of automatic gas water heaters.

A Subcommittee on Laundries is now being formed under the chairmanship of W. D. Williams, Public Service Gas and Electric Co., Newark.

Blue Flame Room

TO present and demonstrate gas ranges, Cribben and Sexton Co. has recently completed a spectacular display room in a building adjacent to the Chicago factory.

Called the Blue Flame Room, it features a New Freedom Gas Kitchen on the stage. Bordering the auditorium are various models of ranges placed in front of a background of fluted glass panels with indirect lighting. The room is finished in aqua green and light rose, and is flooded with indirect fluorescent lighting. The Blue Flame Room is equipped to feed 100 or seat 125 persons at one time.

Blue Flame Room features the New Freedom Gas Kitchen on the stage

September Gas Sales

SALES of the gas utility industry to ultimate consumers in September totaled 1,948,132,000 therms, an increase of 11.8 percent over sales of 1,743,276,000 therms in the comparable month last year, the American Gas Association reported recently. The Association's index of total gas utility sales stood at 179.4 percent of the 1935-1939 average. For the 12 months ending September 30, 1946, sales of utility gas were about 25,905,475,000 therms, a decline of 0.9 percent under sales of 26,147,181,000 therms a year earlier.

Manufactured gas sales during September were 150,552,000 therms, a gain of 13.1 percent over sales of 133,134,000 therms in September. 1945. Sales in the 12 months ended September 30, 1946 amounted to 2,112,273,000 therms, an increase of 1.5 percent over 2,080,827,000 therms sold in the preceding 12-month period. The Association's index of manufactured gas sales stood at 141.3 percent of the 1935-1939 average.

Sales of mixed gas in September, 1946 were 78,589,000 therms, a gain of 25.5 percent over sales of 62,629,000 therms in the same month last year. Mixed gas sales during the 12 months ending September 30, 1946 were 1,218,732,000 therms, compared with 1,171,694,000 therms, an increase of 4.0 percent. The September, 1946 index of mixed gas sales stood at 173.1 percent of the 1935-1939 average.

Sales of natural gas to ultimate consumers for September totaled 1,718,991,000 therms, representing a gain of 11.1 percent over sales of 1,547,513,000 therms in the same month last year. For the twelve months ended September 30, 1946 sales of natural gas were 22,574,470,000 therms, equivalent to a loss of 1.4 percent from sales of 22,894,660,000 therms in the like period a year earlier. The Association's index of September natural gas sales stood at 184.1 percent of the 1935-1939 average.

Calendar Features Gas Kitchens

AN attractive calendar for 1947 devoted to "New Freedom Gas Kitchens" is now available through an organization which has made a specialty of calendars for the gas industry—Eldredge Company, Morgan Avenue & Devoe St., Brooklyn, N. Y.

The new calendar is approximately 9 inches wide by 12 inches long. Illustrations in four colors of four "New Freedom Gas Kitchens" make up the bulk of the calendar with three months of 1947 under each of the illustrations, and complete description of the kitchen featured on the back of each page.

In lots of one thousand to five thousand, the calendar sells for 7½ cents each, five thousand to ten thousand sells for 7 cents each, and in quantities over 10,000, for 6½ cents each. These prices include any desired imprint.

Please address all inquiries to the Eldredge Company.

Gas at National Hotel Exposition

EMBLAZONED across a 109-foot backwall, the eye-arresting statement that "Gas cooks 90 percent of the 62,000,000 meals served daily in public eating places," was the keynote of the American Gas Association's Combined Commercial Gas Cooking Exhibit at the 31st National Hotel Exposition held at Grand Central Palace, New York City, November 11-14.

A record breaking attendance of over 75 thousand buyers crowded the exposition during the four days it was open. They represented not only hotels, but institutions, schools, industrial plants, hospitals, restaurants and dealers in equipment and supplies. The exposition was the largest ever staged, and the visitors who thronged the exhibits were seeking items to implement their rehabilitation programs which are expected to total several billion dollars.

The largest single exhibit was the A. G. A. Combined Commercial Gas Cooking Exhibit where eight manufacturers of gas appliances displayed their latest equipment and played host to the thousands of interested visitors who crowded the exhibit area continuously. The A. G. A. Combined Exhibit was one of the most attractive of the entire exposition, and everyone passing was immediately attracted by the eight mechanical gas flames which surmounted the individual booth separators. The blue and white motif that was carried out on the back wall display and booth fixtures fitted in with the blue gas flames that were visible the entire length of the aisle.

The gas cooking equipment manufacturers represented in the A. G. A. Combined Exhibit were: Detroit-Michigan Stove Company with a restaurant type and a heavy duty hotel type range; The G. S. Blodgett Co., Inc., had a multiple deck oven; Savory Equipment, Inc., showed their latest models of automatic gas toasters. Next in line was American Stove Company with a Magic Chef heavy-duty hotel range and a multiple deck oven; another attractive booth was that of Ershler & Krukin, Inc., who showed a stainless steel thermostatically controlled warming table and their newest coffee urn in stainless steel and chrome finish. Both of these pieces of equipment were connected to the gas line and were operating. The Cleveland Range Co. had a striking stainless steel pressure cooker in their booth section. Next was one of the most outstanding heavy-duty hotel ranges in the entire exposition, a Vulcan Sterling range by the Standard Gas Equipment Corp. The several sections were built entirely of stainless steel, open-top, closed-top, fry-top, deep-fat-fryer, ovens and broilers. The extreme end exhibit booth was occupied by J. C. Pitman & Sons Sales Corp., where they showed their latest models of deep-fat-fryers in both stainless steel and black finish. All the participants in the Combined Exhibit were deluged with inquiries and orders, not to mention requests for deliveries on orders already placed.

It has been estimated as a result of a recent survey that of the gross amount to be expended by hotels on rehabilitation and modernization, about $400,000,000 will be spent for cooking appliances. This was reflected in the inquiries made throughout the show at other exhibitor's booths. The display of gas cooking equipment and other allied gas kitchen appliances was not limited to the A. G. A. exhibit. Scattered throughout the three floors some 43 dealers and manufacturers exhibited nearly 100 pieces of gas kitchen equipment. These included ranges, bake ovens, coffee makers, pressure cookers, coffee urns, broilers, griddles, glass sterilizers, dishwashing machines, volume water heaters, space heaters, toasters and many of these items were, in addition, shown in counter appliance models. Taken all in all the display of gas equipment far exceeded any other single item of merchandise

A general view of the combined gas exhibit which occupied one wall of the National Hotel Exposition

A view of the American Stove Company Booth at the Exposition at Grand Central Palace

in the exposition. Every kind of cooking appliance was shown, from the heavy-duty models for use in the largest hotels and restaurants, to those for use at a lunch bar, coffee shop or one man roadside stand.

This 31st National Hotel Exposition will go down as a milestone in the record attendance, number of exhibitors and variety of merchandise displayed. The American Gas Association is fortunate in having the largest and most successful display of commercial gas cooking equipment, and also in having gas appliances displayed throughout the whole exposition by dealers and manufacturers. Gas is surely the accepted fuel for all commercial cooking.

Heating-Ventilating Exposition

NEW problems in heating, ventilating and air conditioning, and new materials and methods affecting the production of equipment in the air conditioning field have combined to produce many innovations that will be seen at the 7th International Heating and Ventilating Exposition. Preparations are going ahead rapidly in plants all over the country for the display, which is to be in Lakeside Hall, Cleveland, January 27-31, next.

Specifications of the exhibits have already been received from many companies which are making ready machinery, equipment and special displays, according to Charles F. Roth, manager of the exposition. It is being held under the auspices of the American Society of Heating and Ventilating Engineers, in conjunction with the Society's annual meeting. This information indicates that the reconversion period is bringing forth a big turnout of items suited to new requirements and based on war-time progress in manufacturing. The National Warm Air Heating and Air Conditioning Association is also meeting coincident with the exposition.

Alfred J. Offner, president of the American Society of Heating and Ventilating Engineers is chairman of the Advisory Committee, with B. M. Woods, first vice-president of the Society as vice-chairman. R. H. Hargrove, American Gas Association, is on the Advisory Committee.

Interim Bulletin Published

THE HOUSE HEATING and Air Conditioning Committee of the Residential Gas Section, American Gas Association, under the chairmanship of Raymond Little, Equitable Gas Co., Pittsburgh, announces the publication of Interim Bulletin No. 73.

The Bulletin is a summary of the committee's observations on the subject of gas house heating and contains facts and recommendations that should be of interest to many. The price is $.05 for members and $.10 for nonmembers, and may be obtained from the American Gas Association, 420 Lexington Avenue, New York 17, N. Y.

Charles C. Hanthorne

F. S. E. I. Meeting

DEALER COOPERATION was the keynote of an address, "Your Customer Comes First," given by Charles C. Hanthorne of the Hotel and Restaurant Division of the Philadelphia Gas Works Co., before the semi-annual meeting of the Food Service Equipment Industry on Wednesday, November 13.

Mr. Hanthorne told the group of the joint committee of the F.S.E.I. and American Gas Association which met for the first time the day before to facilitate a close working relationship between the two industries. This committee is a permanent one and will meet at regular intervals.

In speaking of the trend among gas utilities in recent years to stop merchandising commercial cooking equipment Mr. Hanthorne had this to say, "When the Gas Utilities stopped selling commercial cooking equipment and turned it over to the kitchen equipment houses, an obligation was placed on the kitchen equipment houses to be fair and impartial in their recommendations, and that because of this they should specify equipment on the basis of advantage to the customer."

"Present the customer with a proposal of the equipment which should be installed," urged Mr. Hanthorne. This equipment should include the following benefits to the customer.

1. Must render a better service in its application.
2. Must be of modern design, more durable, give less service trouble.
3. First cost, installation cost and operating cost must be less."

gas grapevine

Portland (Ore.) Gas & Coke Co is running Brooklyn Union a close second in publishing what they are doing in industrial and commercial gas. One recent item we find in their "On the Job" sheet is that Purdy's Brushes, paint brushes that enjoy a national reputation for quality are vulcanized in gas-fired ovens. Control is automatic—so oven temperature is accurate!

How's about sending us a story, with pictures, on a good gas application in your territory. Our industry needs continuing publicity and we're all set up to give it to you.

J. Bourke our genial director of Commercial Gas Cooking Promotion has been doing a lot of travelling lately visiting numerous groups and talking up gas cooking. His most recent jaunt was to Cincinnati where he mixed with nearly 2000 dieticians at their annual meeting. He found that the gals were wholeheartedly in favor of gas as the tool of their profession.

Ye scribe spent some time around Boston recently and found that gas is used everywhere. For shoes, laboratory glassware, printing, production soldering, winter air conditioning, steel cutting, paint drying, iron alloy melting and so many other uses that we couldn't even begin to count them. Those New England folks are sure gas minded, even the fish works use gas.

If all the gas used in counter cigar lighters was placed end to end, it would fill a holder.

An enterprising gas man was wandering through Chicago recently and saw some smoke drifting out of a small stack where there shouldn't ought to be any smoke in a residential area. On investigation he found a small plant making statuary and using very crude drying methods. He got himself busy and sold a gas-fired drying job—results—no smoke, better quality product, happy workman and more production. This super salesman was what we might call a "snooper salesman."

A Merry Christmas to all from ye scribe,
a.q.s.

Technical Section

C. S. GOLDSMITH, Chairman | A. C. CHERRY, Vice-Chairman | A. GORDON KING, Secretary

Distribution Maintenance Work

BY E. F. SCHULDT

The Peoples Gas Light and Coke Company, Chicago, Ill.

THE present labor shortage, the high cost of labor, and the objection that men have developed toward uninteresting heavy laboring work, makes it imperative that we re-examine all of our practices to discover more efficient, mechanical, and semi-skilled interest-sustaining work methods. The maintenance of a gas distribution system requires too much of the arduous hand digging to be attractive to American labor, and we will find it to our advantage to make the work less objectionable.

Distribution maintenance work in small street openings is a development in this general direction. I wish to present some of our experiences with small openings in Chicago. We are convinced that the methods we use are far superior and more economical than our prior practice of doing the same kind of maintenance in large street openings.

As background, we had an average unaccounted for gas figure of 5.43% in the 1920's. In 1931 we changed from a 530 B.t.u. manufactured gas to a mixed gas of natural and manufactured having 800 B.t.u. The change greatly increased the unaccounted for gas. These were depression years, during which the theft of gas increased tremendously. Between 1934 and 1937, an extensive theft prevention program was instituted. This consisted of the sealing of meters, the elimination of unused service outlets wherever possible, the locking or sealing of those outlets on the building services which could not be eliminated, etc.

Studies of leakage loss made in 1935 also indicated that our distribution system was in need of extensive maintenance to reduce loss. A rehabilitation program was started, and each year thereafter our unaccounted for figure was reduced. The good results accomplished are evidenced by an unaccounted for of slightly over 3% in 1942, 1943, and 1944. In 1945 our unaccounted for was below 3%.

The extensive rehabilitation and system improvement program we started in 1935 was directed toward the renewal of leaking services; the retirement of stubs and services not in use, whether leaking or not, and the retirement of duplicate mains not required for capacity. The service rehabilitation and retirement program completed since 1935 has been accomplished almost entirely by using the small opening method.

The small opening method, or 1′ x 1′ work, takes its name from the one square foot pavement opening which is used in the execution of the work. Long handled tools have been developed with which the work is performed by men working above the pavement. Some of the advantages of the small opening method are as follows:

1. Repaving of the 1 x 1 opening is less expensive than the cost of repaving a large opening. Prior to 1936, when all of our street work was completed in 2′ x 4′, or larger, street openings, we paid a minimum of $15.00 for repaving. The current contract price for repaving a 1 x 1 opening is proportionately smaller.

2. Small opening work is completed with the backfill done so effectively that the opening is ready for immediate repaving without danger of delayed settlement and with absolutely no hazard to traffic from delay in repaving. This type of operation has resulted in improved public relations and has official public acceptance.

3. Less heavy digging work is required in small opening maintenance. It is simple arithmetic to figure out that eight times as much dirt must be removed and replaced from a 2 x 4 opening as that removed from a 1 x 1 opening. In these days, when labor objects to strenuous laboring work, any method by which arduous digging can be reduced surely merits consideration.

4. The larger proportion of mechanical, semi-skilled work, required in small opening activities has made this work interesting and has provided opportunities to the workmen for advancement above the laboring grade.

5. The work can be done more rapidly in an emergency, and men working on a gas leak work out of a gas atmosphere without the necessity of a gas mask. No headaches develop in 1 x 1 work because of "too much gas."

6. Small opening work is precision work and has resulted in more careful planning and execution by the street crews. A 1 x 1 opening must be located at exactly the right spot to be effective. The incidence of wasted work on unproductive street openings has been reduced to a minimum.

7. The overall labor cost in small opening maintenance is much smaller than that required on the same maintenance in large openings.

Abandoning Services and Stubs

It might be well to review briefly the 1 x 1 opening work as it developed in Chicago. In 1934 our good friends in Baltimore and Philadelphia kindly demonstrated their small opening procedures to two of our engineers. Tools were fabricated according to drawings and specifications they gave us and in 1935 some 2,000 jobs were completed in small openings. Our first endeavor was in the retirement of stub services, which is comparatively simple. After the service tap is accurately located at the main a 1 x 1 square opening is made over and exposing the service connection. The service is cut off with a long handled hack saw or a long handled four wheel cutter. The fittings are removed and the main is plugged. All work is done by men working on the surface of the street, even though the main is 6 to 8 feet below the surface.

Renewing Services

Renewal of services is more difficult and was not too successful at first. The principal drawback was in attempting to use the old type of screw fittings at the main. To overcome this difficulty a number of experiments were made and, with the help of a welder, we designed and fabricated a new type of fitting which has been most satisfactory in service renewals. Street fittings and compression couplings cut in two were welded to make compression street tees and compression street ells. A cooperating manufacturer soon made this type fitting in malleable iron for us, and we have been using them ever since.

In the renewal of services, the old service is exposed at the main in a 1 x 1 opening. The service is cut off and the main is plugged temporarily. The old pipe is removed by pulling it out from under the street pavement into an excavation in the parkway or directly into the basement. New

Presented at the 28th Annual Convention, American Gas Association, Atlantic City, October 7-11.

pipe is inserted into the hole from which the old pipe is removed and the end is stabbed into the compression fitting screwed into the main.

Copper Services

Replacement of 1½" steel services with 1¼" copper pipe by inserting the copper pipe inside the old steel pipe was adapted to small opening work in 1939. A line of brass fittings designed in Chicago are available in sufficient variety and with dimensions that will line up with the copper pipe inside the old steel pipe. In this activity the same general procedure is followed except that, instead of pulling out the steel pipe after it is cut off at the main, the inside of the pipe is cleaned of all loose deposit to permit the copper to slide in readily. The copper is pushed into the steel pipe in the basement in lengths that the clear space can accommodate. The next length is joined to the first by a soldered coupling. The coupling or sleeve, is an inside coupling slightly smaller in diameter than the 1¼" copper. This gives a streamline to the joint, which allows it to pass through the old steel pipe. Copper replacements are less expensive than replacements with steel in many installations. The savings in labor costs more than offset the higher material costs. This is particularly true when a service renewal is required where the old pipe is in frost or cannot be pulled out for other reasons. Copper has been used to replace steel services over 100 feet long, using a single 1 x 1 opening at the main.

This year we examined a number of copper services installed in 1939 to inspect their condition. While the elapsed time is still short, we were well pleased to find the services examined to be in perfect condition. The pipe and fittings were removed from the ground, carefully examined and reinstalled. There was no pitting on either pipe or fittings. Pipe not protected by the steel sheath (that is, the old steel service) was blackened but the pipe inside the steel was bright as though it had just been newly installed. We cut out and examined all soldered joints and found no evidence of deterioration. The wall thickness of the hard drawn copper pipe we use is .042".

New Services

New services are also installed in small openings. The opening is made over the main in line with the service to be run. The main is tapped with the 1 x 1 tapping tool and the pipe is pushed out to the opening from the basement or from the parkway, where it is connected to the main in the usual way. Our street mechanics have become very proficient in fitting up between the tap in the main and the service pipe.

Bell Joint Clamps

In 1939 Bell Joint Clamps were developed in Chicago in sizes up to 12" for installation in small street openings. The joint is exposed in a 1 x 1 opening. Tools for thoroughly cleaning the pipe and bell are manipulated from above the pavement and the clamp is then lowered and installed from above.

Miscellaneous

Broken mains are also repaired in 1 x 1 openings by installing a split sleeve over the break after the pipe is cleaned. The trick in repairing a broken main, or a leaking joint, in a small opening is to locate the break or joint so that the 1 x 1 can be made at the proper spot. The bags of the Chicago Leak Locator are frequently used to exactly spot the opening required.

Small openings are also used on a number of related maintenance problems. The bags of the Chicago Leak Locator are inserted into the main in a 1 x 1 in testing mains and locating leaks. Test holes to secure information on other utility lines in advance of main construction work are generally 1 x 1 openings. We also look for water leaks and do other miscellaneous testing through small openings.

All of our street crews are equipped with tools for small opening work and we make it a point to do as much of our work in small openings as the art permits. Small opening work is far past the experimental stage in Chicago, although broader application and new procedures are constantly being suggested and developed. For example, recently one of our employees made a tool with which we can renew a service which is side tapped into the main.

The 1 x 1 opening has stimulated the thinking of those who work with it. The work is interesting and it challenges the ingenuity. It is a development which has substituted a mechanical art for plain hand digging. We are looking for the means to eliminate more of this hand work. A mechanical, motor driven auger for digging out the 1 x 1 opening offers a possibility which is being considered.

I have related briefly the kind of work we do in small openings. To be successful, however, there is more to the program than the performance of the work itself. A 1 x 1 opening, to be useful, must be made at exactly the right spot. Men well trained in the use of the pipe locator, such as the M Scope, or the Goldac, are relied upon to supplement the available records and to mark out the intersection of main and service. The gas indicator, the gas stethescope, the Chicago Leak Locator, vegetation surveys, and other scientific aids should also be employed to accurately determine where and what work must be done.

I want to emphasize again that substantial savings are possible in distribution maintenance costs through small opening operations. As to effectiveness; earlier, I stated that our unaccounted for figure was reduced below 3% in 1945. As to volume of work, from 1935 to 1945, inclusive, we renewed 84,000 services, 8,600 of which were replaced with copper pipe. In the same period we abandoned 58,000 stubs and services not in use. We also installed 44,000 leak clamps, 14,000 of which were 1 x 1 installations. This work was completed on a system having 3,600 miles of main and 550,000 services.

It is not possible to avoid large street openings in some work. New main construction and maintenance work on the larger mains certainly requires large pavement cuts. However, wherever possible we work in a 1 x 1 opening, and it is significant that since 1939, 61.2% of the number of pavement openings we made were 1 x 1 openings.

This discussion has been limited to a short outline of small opening procedure. Much of the detail has been omitted, since more complete information can be obtained by reference to published material; specifically, the August 28, 1941, issue of Gas Age contained an article by Messrs. O'Connor and Bogumill, who gave a comprehensive account of "Main and Service Work in Small Openings." The article is well illustrated to show methods, tools, and fittings. Reprints of the article are available, which I will be glad to send out on request.

A CUSTOMER is a person and not a statistic. He has feelings, emotions, biases, prejudices and wants. It is our job to satisfy him. If profitable to him, we save buying large quantities of red ink.

—*Paul T. Babson, Standard & Poor's Corp.*

"Why Are Associations?"

● "There are two ways in which men can be banded together to accomplish a purpose. One is regimented mobilization under duress. The other is voluntary, as an association that has a fine, constructive purpose finds its ranks. It attracts rather than forces. And its works live longer in human history.

"The banding of mankind under pressure of fear or coercion may bring temporary success, but it contains the germs of its own destruction. Whether it be one, a business men's association that employs pressure tactics to force membership and compliance, a political party that must enforce harsh discipline in order to keep its members under the spell of fear, that band is doomed eventually to die of its own internal poison. It has been so since the beginning of time.

"Contrast this with the fine accomplishments of many unselfish and constructive associations. They band together to make things better, to improve and stimulate growth, develop both the individual member and the group as a whole. They are of benefit to mankind. May there be more of this kind of healthy, unselfish and constructive grouping. May some of the other type see the light and change their course into that light."

—*Electrical West.*

Under the chairmanship of R. A. Seifert, The Cincinnati Gas & Electric Co., Cincinnati, Ohio, the Subcommittee on Meters and Metering is planning study of raw materials for both meter repair and manufacture, and revision of the Meter Repair Manual

The Distribution Committee, J. H. Collins, chairman, New Orleans Public Service Inc., H. W. Nicolson, vice-chairman, Public Service Electric & Gas Co., Newark, N. J., will form separate Subcommittees on Construction, Maintenance and Domestic Regulators

The Organic Sulphur Committee, Dr. E. W. Guernsey, chairman, Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Md., is planning to continue study on practical situations along with research work at the Institute of Gas Technology, Chicago

Motor Vehicle Committee meeting in New York

Technical Men

PROGRAMS that hold promise of great benefits to the entire gas industry were adopted by the more than 100 members of the Technical Section of the American Gas Association who journeyed from nearly every part of the country and Canada to attend the Organization Meetings of the Section held at the Hotel New Yorker, New York City, on November 18th and 19th.

C. S. Goldsmith, The Brooklyn Union Gas Company, chairman of the Technical Section, and A. C. Cherry, vice-chairman, Cincinnati Gas & Electric Company, welcomed the committee members and assisted the chairmen of the several committees in getting their meetings under way. The Distribution Committee, with J. H. Collins, New Orleans Public Service Company, as chairman, and H. W. Nicholson, Public Service Electric & Gas Co., Newark, N. J., as vice-chairman, met on Monday. Other committees meeting Monday were the Chemical Committee, W. R. Fraser, Michigan Consolidated Gas Co., Detroit, chairman, and J. G. Sweeney, The Brooklyn Union Gas Co., vice-chairman; and the Gas Production Committee, with S. Green, The Brooklyn Union Gas Co., chairman, and C. Russell, vice-chairman.

The Motor Vehicle Committee, of which B. D. Connor, Boston Consolidated Gas Co., is chairman; the Gas Chemists' Handbook Committee, with E. L. Sweeney, Boston Consolidated Gas Co., chairman; and the Organic Sulphur Committee, with Dr. E. W. Guernsey, Consolidated Gas Electric Light & Power Company, as

Committee on Revision of Gas Chemists' Handbook

The Chemical Committee, W. R. Fraser, chairman, Michigan Consolidated Gas Co., Detroit, and J. G. Sweeney, vice-chairman, The Brooklyn Union Gas Co., Brooklyn, has reported "Gaseous Fuels," "Chemical Index," and literature abstracts will be printed

The Gas Production Committee, S. Green, chairman, The Brooklyn Union Gas Co., and C. Russell, vice-chairman, Koppers Company, Inc., have included Peak Load Production, High B.t.u. Gas, Motor Drives versus Steam Drives, along with Tar Dehydration, as agenda items

Executive Committee, C. S. Goldsmith, chairman, The Brooklyn Union Gas Co. met with committee chairmen to further coordinate the working details of the several committees for presentation to the Managing Committee of the Technical Section

Plan for 1947

chairman, met on Tuesday. Subcommittees were appointed in each of the groups and ambitious programs were laid out for the present Association year.

The enthusiasm of the committee members and their determination to overcome handicaps resulting from emergency war conditions were outstanding characteristics of the meetings. Plans were made for carrying on several valuable studies and projects, which when completed will greatly benefit both the manufactured and natural gas branches of the industry. Research, development and educational projects were incorporated in programs that are attuned to the new, aggressive spirit of the gas industry.

This spirit was evident in the preliminary plans outlined by the Program Committees for the Annual Conferences of the Distribution and Motor Vehicle groups in Cleveland next April and the Conferences of the Production and Chemical Committees in New York in June. Lists of authoritative speakers are now being made up and preparation on several of the papers to be presented at the conferences already has started.

The Managing and Advisory Committee Dinner Meeting was preceded by a meeting of the Section's newly organized Executive Committee, composed of the chairman and vice-chairman of the Section, the two immediate past-chairmen with representatives selected from the Manufactured and Natural Gas Departments of the Association.

Laboratories

ARTHUR F. BRIDGE, Chairman

R. M. CONNER, Director

Conversion Burner Requirements

INSTITUTING a series of meetings for the purpose of reviewing and revising American Standards for conversion burners, the A. G. A. Approval Requirements Subcommittee on Installation and Listing Requirements for Gas Conversion Burners met at the Cleveland Laboratories on October 29 for the initial session of the series.

Construction sections of the listing requirements were discussed with resumption of the talks scheduled for December.

Due to the sudden popularity of gas house heating in many sections of the country with particular emphasis in the conversion burner field, interest in strengthening conversion burner requirements and revising them to meet present needs has been strong. Approximately 50 new companies have entered the field recently, submitting equipment to the Laboratories for approval. This is several times the number appearing in the Directory of Approved Gas Appliances and Listed Accessories before the war.

Tin From Gas?

NATURAL GAS may be the means of freeing the United States from its present galling dependence on foreign sources for tin. Biggest use of tin, of course, is for coating sheet steel used in cans. A du Pont chemist, Milton J. Roedel, has invented a process for coating sheet metal with a solid polymer of ethylene, one of the constituents of natural gas, which is claimed to give at least as good protection as the conventional coating of tin.

The gaseous ethylene is turned into a solid suitable for coating purposes by subjecting it to very high pressures and moderately high temperatures. Dissolved in xylene and applied to black sheet steel in a layer one thousandth of an inch in thickness, then baked on, the polymer coating is flexible enough to withstand the bendings and crimpings encountered in can manufacture, and has high resistance to both acids and abrasion.

Specifications Developed for Connectors

DEMONSTRATING that a completely satisfactory automatic plug-in connector for gas appliances is well within the realm of possibilities, the American Gas Association Testing Laboratories, by a study of current commercial types, have redesigned and modified one model to successfully meet tentative service specifications established in a preliminary study.

Sponsored by the A. G. A. Committee on Industrial and Commercial Gas Research in hope that the project would encourage further interest and development work, detailed results of the study and its technical aspects are presented in Research Report No. 1064, recently published.

Specifications developed for comparison of eight contemporary designs considered and tested were based upon five premises: safety, convenience, simplicity, capacity and durability. In general it was found that although some of the connectors were found to meet the tests in all but one or two of the categories cited, none were found to be entirely satisfactory.

It was found that various elements of construction could be considered satisfactory in themselves such as seals, valves and operating mechanisms, but that these were not found associated together in any one connector and hence the possibilities of designing a completely satisfactory connector by combination or improved design are good. Of the two major types investigated, the plug-and-barrel-type and the poppet-type, the former was considered more satisfactory. No sliding-type-valve, such as sleeve or rotary disc, was investigated, since samples employing valves of these types were not available.

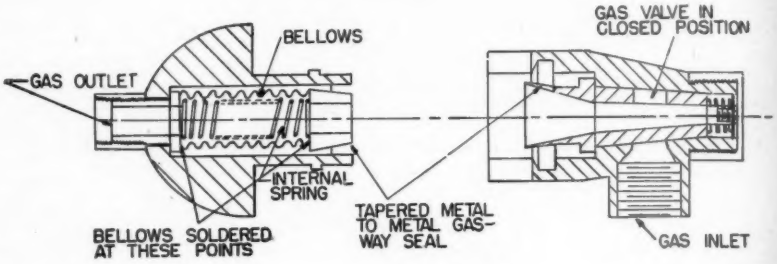
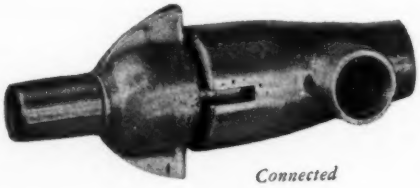
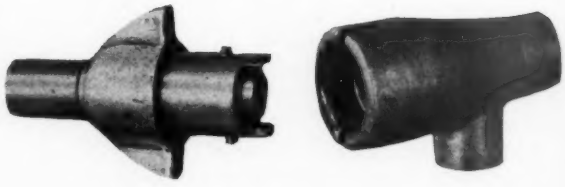


Fig. 1. Plug-in connector as modified by A. G. A. Laboratories



Connected



Disconnected

Fig. 2. Cross section of modified connector

Associated Organization Activities

Mid-West Sales Conference

THE sixteenth annual Mid-West Regional Gas Sales Conference, sponsored by the Residential Gas Section of the American Gas Association, will be held March 17-18, at the Edgewater Beach Hotel, Chicago. The last conference, held in 1941, attracted 780 persons.

Officers of the Mid-West Regional Gas Sales Council, elected at a meeting in Chicago, September 23, are J. C. Sackman, Northern Indiana Public Service Co., chairman, and B. H. Wittmann, The Peoples Gas Light and Coke Co., vice-chairman. H. D. Valentine, The Peoples Gas Light and Coke Co., was appointed conference coordinator and E. S. Finerty of the same organization will supervise the financial details.

Topics around which a program of paramount interest to sales managers will be built include: sales training, advertising, dealer participation, public relations, markets and marketing, appliance developments and competitive challenges.

The general plan of the conference will be similar to previous meetings of the Mid-West group. A home service breakfast will be held on the morning of March 18 and the conference will conclude with a dinner.

Those planning to attend are urged to make their hotel reservations as early as possible.

N. E. G. A. Home Service Conference Held

MORE than 50 home service directors and representatives of New England gas companies, together with sales and commercial managers for those companies, attended a two-day conference, sponsored by the New England Gas Association, in the auditorium of the Boston Consolidated Gas Company on October 24-25.

The conference, supplementing the highly successful five-day conference held last year, was addressed by leaders of the gas industry representing both the utilities and the manufacturers. Among the subjects covered were the future of home service, various specialized home service demonstration projects, recent developments in the food, utensil and appliance fields, management's viewpoint on home service and a round-up of sales promotion aids available to home service representatives.

A feature of the conference was a display of new models of gas appliances which were arranged on the auditorium floor and attended by manufacturers' representatives. One of the highlights of the first day was the presentation of a skit on home service work prepared and enacted by recent recruits to home service work in the New England companies.

The conference was held under the sponsorship of the Home Service Educational Committee, Home Service Group of the Sales Division of N.E.G.A. and was presided over by Susan Mack, home service director for Boston Consolidated Gas Company. Chairman of the Home Service Educational Committee is Mrs. Lillian P. Dunbar, home service director of the Cambridge Gas Light Company.

Mid-Southeastern Annual Gas Meeting

C. B. ZEIGLER, Public Service Co. of North Carolina, Inc., Gastonia, N. C., was elected president of the Mid-Southeastern Gas Association at the eighth annual meeting of that organization which took place November 21-22 at Raleigh. L. A. Scott, Duke Power Co., Charlotte, N. C., was named first vice-president and H. W. Gee, Watauga Valley Gas Co., Johnson City, Tenn., was selected for second vice-president. Edward W. Ruggles, North Carolina State College, was re-elected secretary and treasurer.

The well-rounded program attracted an attendance of 200, and included talks on liquefied petroleum gas utilization, carbureted water gas practices, sales, accounting and research. Interest centered around the use of liquefied petroleum gases as distributed by utilities either as propane air mixtures or bottled gas.

The meeting closed with a banquet at which the guest speaker was Governor Cherry of North Carolina.

New Jersey Association Elects Officers

HOWARD H. MELVIN, general manager of Millville Utilities, was unanimously elected president of the New Jersey Utilities Association at its convention at Atlantic City, November 22. He succeeds H. C. Thuerk, president of the New Jersey Power & Light Co. Other officers named were:—Jacob O. Herr, Monmouth Consolidated Water Company, vice-president; Richard E. Swift, Atlantic City Electric Company, treasurer; Howard B. Allen, New Jersey Power & Light Company, secretary. Harry Bacharach, Atlantic City, remains executive director. Appointed as members of the executive committee were E. H. Warner, N. M. Argabrite, Richard M. Swift and C. J. Alfke.

Mid-West Regional Gas Sales Conference held recently in Chicago, Ill.

Factors Affecting Water Heater Sales

SUCCESSFUL gas water heater promotional programs have at least four points in common, it is revealed in the results of a recent survey conducted by the Promotional Bureau in cooperation with the Water Heating Committee of the American Gas Association. While not necessarily conclusive, the results of this survey which represent replies from gas utility companies having a total of 12,500,000 meters, are interesting and are offered for the information of the industry. The survey brought out these major factors:

1. All successful plans had a water heater promotional rate or its equivalent. This rate was 15 cents per therm or less. This seems to indicate that for automatic gas water heating to compete successfully with oil, coal and other fuels, a rate must be established that should not exceed 15 cents per therm.

2. All successful water heater promotional plans used long terms, small monthly payment financing plans. These ran up to 60 months with the monthly payments not exceeding $3.00 per month for the appliance itself. Regulation "W" prevents any such terms at present. The results of this survey, however, are offered for long range planning.

3. While some companies employed rental plans successfully, the evidence shown by the survey indicates that automatic water heaters can be sold as effectively as they can be rented, provided a long term financing plan is available for such sales and the rate structure is attractive for water heating.

4. All the successful plans were strongly promoted. Newspaper advertising, radio, direct mail, posters, and other media was used. Dealer and plumber cooperation was emphasized.

G. A. M. A. Annual Meeting

D. P. O'KEEFE, president of Gas Appliance Manufacturers Association, has announced that the Association's annual meeting will be held at the Drake Hotel in Chicago, April 14-16, 1947.

Ginn Appointed to LP-Gas Committee

Lloyd C. Ginn

LLOYD C. GINN, advertising and sales promotion manager of the American Stove Co., has been appointed to the LP-Gas Association Advertising and Publicity Committee which met October 8 in Atlantic City, N. J.

Mr. Ginn has been active in association work for a number of years. He is, at present, chairman of the Domestic Range Division of the Gas Appliance Manufacturers Association and serves on six gas industry committees representing the Gas Appliance Manufacturers Association and the American Gas Association.

Automatic Disposal Unit

HERE'S news for the smart home owner of today as the automatic gas-fired home disposal unit called the Calcinator assumes its rightful niche in the postwar kitchen, or space not permitting, in the utility room, basement or garage. Handsome in design and compact in size—18" wide by 24" deep by 36" high, which is the regulation counter height—the Calcinator is an attractive and practical complement to the most modern kitchen.

Fulfilling a long felt need, it comes into its own as the homemaker's silent, smokeproof, odorless partner, easily installed and economical to operate . . . . so little fuel is needed because 98 percent of all the heat utilized in waste disposal is provided by the material being consumed. And, the blue gas flame itself is smaller than the school or laboratory size bunsen burner flame.

Calcination may require anywhere from 5 minutes to 24 hours depending on the quantity and type of refuse. Although the unit has a capacity of 1.3 bushels, or approximately 60 pounds, it is best to deposit the refuse in small amounts as it accumulates, rather than in large batches. Operating at peak efficiency when burning waste slowly the Calcinator down-draft principle is to carry heat down through the refuse, drying materials such as garbage, and then setting fire to the dry material.

The Calcinator

The Calcinator is manufactured by the Calcinator Division Valley Welding and Boiler Company, Bay City, Michigan.

Statement of the Ownership, Management, Circulation, Etc., Required By the Acts of Congress of August 24, 1912, and March 3, 1933

Of American Gas Association Monthly published monthly, except July and August, By-monthly then; at Brattleboro, Vermont for October 1, 1946.

State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared James M. Beall, who, having been duly sworn according to law, deposes and says that he is the Editor of the American Gas Association Monthly and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are: Publisher, American Gas Association, Inc., 420 Lexington Ave., New York 17, N. Y.; Editor, James M. Beall, 420 Lexington Ave., New York, N. Y.; Managing Editor, Ainslie W. Walter, 420 Lexington Ave., New York, N. Y.; Business Managers, None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

American Gas Association, Inc., 420 Lexington Avenue, New York, N. Y.; President, E. J. Boothby; Treasurer, Edward F. Barrett; 1st-Vice President, R. H. Hargrove; 2nd-Vice President, Hudson W. Reed; Managing Director, H. Carl Wolf (all of 420 Lexington Ave., N. Y. 17, N. Y.).

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is . (This information is required from daily publications only.)

JAMES M. BEALL, Editor.

Sworn to and subscribed before me this 16th day of October, 1946.

(Seal)

LAWRENCE P. BROWN,
Notary Public, Queens Co. No. 278, Reg. No. 110-B-7
Cert. filed in N. Y. Co. No. 1023, Reg. No. 89-B-7
Commission expires March 30, 1947

Personal and Otherwise

A. G. A. Membership Drive Chairman

Joseph N. Greene

JOSEPH N. GREENE, president of the Alabama Gas Company, Birmingham, has been re-appointed chairman of the Membership Committee of the American Gas Association, it has been announced by R. H. Hargrove, president of the Association. Mr. Greene, who is an A. G. A. director, will be assisted by a group of gas company executives representing different sections of the country.

During the Association year ending September 30, 1946, a large number of new members were added as a result of the activity of the committee.

Assumes Reservation Duties

MISS GLADYS HANSHAW who, as assistant secretary of the Accounting and Technical Sections of the American Gas Association, has eased the burdens of many Association members by securing hotel reservations for them in New York, has been definitely assigned by H. Carl Wolf, managing director, as Secretary of Reservations and Arrangements.

In her new post, Miss Hanshaw's services in the making of hotel and travel reservations will be available to all members of the Association when in, or planning to visit New York.

Kohut Becomes General Manager

ANNOUNCEMENT has been made by The C. M. Kemp Mfg. Co., Baltimore, of the advancement of Frank J. Kohut to the post of general manager. Formerly sales manager and chief of development, Mr. Kohut will now supervise production, engineering and other internal functions, along with external. The company is an old line producer of equipment for industrial process heating, gas mixing, atmosphere generation, and moisture control—and has fathered improved techniques of soft-metal melting, textile singeing, nitrogen production, and fuel carburetion. Kohut is A.S.M.E. and joined the company in 1945 from American Viscose.

Named Home Service Director

M. Millicent Bibza

MILLICENT BIBZA has been named home service director at the Hilltop office of The Manufacturers Light and Heat Co., Pittsburgh.

In announcing this appointment, Flora G. Dowler, home service supervisor, revealed that Miss Bibza has assumed responsibility for the natural gas company's home service activities in such suburban Pittsburgh communities as Canonsburg, Washington, McKees Rocks, Clairton, Dormont, Brookline, Beechview and Mt. Lebanon.

The new home service director is a native of Duquesne, Pa. She attended Duquesne High School and received her home economics degree from Valparaiso University. Miss Bibza also completed post-graduate studies at Carnegie Institute of Technology.

Canadian Gas Official Retires

Gordon D. Wickett

RETIREMENT of Gordon D. Wickett as vice-president and general manager of the Windsor Gas Company Limited, Canada, was announced recently by Thomas Weir, company president.

Mr. Wickett's retirement became effective November 1, but he has agreed to remain identified with the company in a consulting capacity. A successor has not yet been selected.

Mr. Wickett moved to Windsor 60 years ago and practically his whole business career has been connected directly with the gas industry in Windsor and district.

He started in 1901 with the Ontario Natural Gas and Oil Company and in 1903 transferred to the Windsor Gas Co. which then was manufacturing gas largely for lighting and fuel uses. At that time there were less than 1,000 meters in service and Mr. Wickett has seen this number grow, largely under his management, to approximately 25,000 units.

Later when additional supplies of natural gas again became available, Mr. Wickett had an active part in the organization and change over from manufactured to natural gas.

During his employment with the company there were changes in ownership of the company, but the local management continued to be his responsibility and in 1917 he became vice-president and treasurer and later general manager, a position he retained until his retirement.

Mr. Wickett has been associated with the Canadian Gas Association and the Natural Gas and Petroleum Association of Canada and has been, for many years, a member of the American Gas Association.

C. E. D. State Chairman

Frank C. Smith

F. C. SMITH, president, Houston Natural Gas System, Houston, Texas, has been appointed Texas State Chairman of the Committee for Economic Development. Mr. Smith has served as Harris County Chairman of the C.E.D. since April, 1943 and was active in inaugurating its field development program during the final war years.

On October 8, Mr. Smith was elected a director of the American Gas Association at the annual Convention in Atlantic City.

Included among other activities in which Mr. Smith is engaged are the posts which he holds as president of the board of directors of Texas College of Arts & Industries, Kingsville, and as president of the Texas Division of the American Cancer Society.

Heads LP Gas Conversion Service

Robert B. Leydig

A NEW service and department, designed and created to expedite the growing trend for conversion of manufactured gas plants, particularly of the coal, oil, and water gas types, to propane- and butane-air operations, or for peak-load standby service, has been announced by Southern Gas & Equipment Co., Tulsa, Oklahoma. Robert B. Leydig, until recently affiliated with Walco Engineering & Construction Co., Tulsa, has been appointed general manager of this new department, effective October 15, it was announced by Frank P. DeLarzelere, president of the company.

Rauch Re-named Chairman of Personnel Committee

Fred R. Rauch

FRED R. RAUCH, vice-president in charge of industrial relations, Cincinnati Gas and Electric Co., Cincinnati, Ohio, has been re-appointed chairman of the Personnel Committee of the American Gas Association, it has been announced by R. H. Hargrove, president of the Association.

At a time when labor relations rank as one of the nation's paramount problems, this committee has rendered significant service to the utility industry by sponsoring a continuing series of personnel conferences and other important activities. A highly successful year culminated with the holding of a well-attended employee relations forum at the Association's annual convention in Atlantic City, N. J., October 7-11.

Mr. Rauch is a registered professional engineer with twenty-five years' experience in the construction of many types of industrial, commercial and public works structures such as buildings, bridges, roads, dams, airports and flood control projects in the United States, Hawaii, Puerto Rico and the Virgin Islands. This required the employment of substantially all types of unskilled, skilled, professional and technical personnel and relations and labor organizations of many types.

He was employed by the Federal Government for eight years in engineering, labor relations and executive positions. Mr. Rauch was also a member of the original Labor Management Committee of the Office of Production Management. He is a member of the Industrial Relations Committee of the Edison Electric Institute, and of the American Management Association.

Heads Accident Prevention Program Again

Howard T. Jayne

HOWARD T. JAYNE, safety inspector, The Philadelphia Gas Works Co., Philadelphia, Pa., has been re-appointed chairman of the Accident Prevention Committee of the American Gas Association to serve the 1946-1947 term, it has been announced by R. H. Hargrove, president of the Association.

Mr. Jayne has been a member of numerous public utility committees and, during the past two years, has been a member of the Executive Committee, National Safety Council, Public Utility Section. He first entered the gas industry in 1917, when he joined The United Gas Improvement Co. as cadet in The Philadelphia Gas Works Company. Mr. Jayne was also operating superintendent of the Gloversville gas plant, Fulton Gas and Electric Co., from 1920 to 1926, and has been associated with The Philadelphia Gas Works Co. in several capacities since that time. He has been safety inspector in the casualty and insurance department since 1934.

Mr. Jayne is also a member of the Philadelphia Safety Engineers Club and the American Society of Safety Engineers. He was a Training-Within-Industry inspector during the war.

New Home Service Committee Chairman

Mary Belle Burnett

APPOINTMENT of Mrs. Mary Belle Burnett, director of the Home Service Division of The Cincinnati Gas and Electric Co., Cincinnati, Ohio, as chairman of the Home Service Committee of the American Gas Association has been announced by W. M. Chamberlain, chairman of the Residential Gas Section. Mrs. Burnett succeeds Mrs. Lillian P. Dunbar, home service director, Cambridge Gas Light Co., Cambridge, Mass., who served during the 1945-1946 A. G. A. fiscal year.

A graduate of Carnegie Institute of Technology, Mrs. Burnett taught Home Economics before joining the Cincinnati utility in 1930. She was assistant home service director for the first five years and thereafter directed the department which has become well known in that community.

Mrs. Burnett has been active in promoting the organization of a Home Economics in Business group in Cincinnati and served on the publicity committee for the American Dietetic Association Convention held in Cincinnati in October. She is also an active Altrusan and serves on the Nutrition Council which is still functioning in Cincinnati. She assists the University of Cincinnati by giving an equipment laboratory course for home economics students.

In addition to many other activities, the home service department which Mrs. Burnett directs, sponsors an annual nine-day cooking school in cooperation with the Cincinnati Times Star. Held in connection with the Pure Food Show at the Cincinnati Zoological Gardens, this year's school attracted an attendance of from three to five thousand daily. The department also plans to hold a series of classes for business girls in the near future.

Named Assistant Treasurer

Charles A. Massa

CHARLES A. MASSA was advanced by The Manufacturers Light and Heat Co. on November 1, to the position of senior assistant treasurer.

Mr. Massa joined the Columbia system of natural gas companies in February, 1930. Assuming the responsibilities of a rate engineer, Mr. Massa had initial headquarters in Columbus, O. A few months later he went to Pittsburgh in the same capacity.

Since June, 1945, the new financial executive has been Tax agent and chief statistician for the Pittsburgh Group of the Columbia natural gas companies, of which The Manufacturers Light and Heat Co. is a part. Mr. Massa will continue to make Pittsburgh his headquarters.

Tappan Representatives

CHARLES W. BONAR, Chicago sales representative for the Tappan Stove Co., has been named director of retail sales training for the firm effective November 25.

A World War II veteran, Mr. Bonar served as a staff sergeant with the 91st Infantry Division in Italy. He has been associated with Tappan Stove since 1937.

It was also announced that Earl C. Greene and Charles R. Aungst, both former Army officers, have been assigned to the Chicago area as sales representatives.

Mr. Greene, former captain serving in the South Pacific, was a salesman for Westinghouse and Procter and Gamble before joining the organization. Mr. Aungst, former first lieutenant in the European theater of operations, started with the company in 1941.

Harold Jalass Appointed General Sales Manager

HAROLD E. JALASS has been appointed general sales manager of Cribben and Sexton Company, manufacturers of Universal Gas Ranges, according to an announcement made by W. M. Hillborn, executive vice-president of the company.

Mr. Jalass joined the company in 1917 and was added to its sales staff in 1922. For the past 15 years he was district manager of the metropolitan Chicago area, during which time he conducted over 1500 point-of-sale demonstrations before groups ranking from 25 to 200 persons. In August Mr. Jalass was appointed assistant general sales manager to John E. Bogan, whom he now succeeds.

Obituary

ERNEST B. MARTIN, 64, for many years a sales representative of American Stove Company, recently suffered a cerebral hemorrhage while walking along the street near his home in Chicago and died two days later at Ravenswood Hospital.

Ernie, as he was affectionately known throughout the industry, was born January 3, 1882 in Chicago. Starting with the Clark Jewel Division of American Stove Company, July 1, 1902, he traveled the Wisconsin territory, later the Chicago and suburban territory. For many years he supervised sales in Illinois, Iowa, Nebraska, Colorado, Wyoming, Utah and Idaho.

Mr. Martin was one of the early promoters of the Lorain Red Wheel oven heat control. He was adept at cooking and baking, and during the pioneering stage of the oven heat control, he conducted baking schools for many gas company groups and women's organizations to demonstrate the value of this new innovation.

Mr. Martin accepted his retirement pension from the company on August 1, 1945, because of failing health.

JOSEPH M. CHILCOTE, age 63, superintendent of production and transmission for The Peoples Natural Gas Company, Pittsburgh, Pa., died November 7. Mr. Chilcote had not been in good health for several months.

Mr. Chilcote was born at Cole's Summit, Pa., in 1883. After attending Taylor University Preparatory School, Upland, Ind., and Juniata College, Huntingdon, Pa., he entered the employ of The Peoples Natural Gas Company at Turtle Creek, Pa., in 1908. Prior to that time Mr. Chilcote was employed by the Westinghouse Electric and Manufacturing Company. In 1911, he was transferred to the Aliquippa City Plant and later to Burgettstown and Waynesburg. In 1923, Mr. Chilcote was named field superintendent for The Peoples Natural Gas Company at Waynesburg, Pa. In 1931, he was transferred as superintendent of the New York State Natural Gas Corporation, residing in Wellsboro, Pa. In 1937, he was again transferred to the general offices at Pittsburgh, as superintendent of production and transmission.

Besides his wife, he leaves one son, Andrew, and three daughters, Mary Jean, Ruth Anna, and Josephine.

WHAT THE PUBLIC THINKS

(Continued from page 525)

so sold on it that they do not want to run any risk of losing it by allowing it to become static. To most people continuous employment is more important than continuous dividends but that does not mean they do not want the latter, it simply means they do want the former. To most people freedom from want is more important than freedom from governmental regulation, so it is not surprising if they cannot be induced to worry about the problems of others so long as their own remain unsolved. Most people want, as I said at the outset, a capitalistic, democratic society. They want it so badly, in fact, that they insist on personally getting, not only democratic treatment, at the hands of others, but some capital for themselves as well!

LABORATORIES' ACCOMPLISHMENTS

(Continued from page 527)

ment. It is very hard to conceive a more practical arrangement for the reason that it should be perfectly obvious that men who become experts in testing appliances, theoretically at least, should know most about working out fundamental ways and means for improving their performance. Thus we have a very practical combination where testing on one hand and research on the other augment industry's efforts to provide better and more acceptable gas equipment.

It is not only significant, but highly complimentary to our industry, to know that it was one of the very first to install a program of self-regulation in its customers' interest. It is now, and for the past twenty-one years has been, administering probably the most complete plan in existence for this purpose. While its unit cost was probably somewhat higher in the beginning than it is now, the amount at all times must be substantial. Of this much we are quite certain, however, and that is that we will receive wonderful dividends on our industry's investment.

Sometimes we are accused of being rather altruistic. I feel, however, that sensible is perhaps a better and more descriptive term. It is true that our industry has voluntarily assumed a financial burden that totals perhaps as much as $25,000,000, even at this early date. Recently, however, we computed the total cost of the Laboratories' services for testing and carrying on approval over a period of five years. On the basis of current conditions, we arrived at a figure of somewhat less than five cents per approved appliance. Although other costs would no doubt enter in, the overall cost is surprisingly low. In any event, it seems like a very small and logical contribution to make toward assuring our industry's future security.

OUR EQUITY IN INDUSTRY

(Continued from page 533)

find it today with due recognition of the varied reasons and forces that have contributed to its present development. Perhaps we can't arbitrarily shift loads or load factors as we might wish to do. We have to be sure that whatever we do to effect these changes will not disturb the highly complex economic fabric upon which our business and communities are built. We have seen so much experimentation by others naive enough to believe they can artificially control some of the forces of an intricate economic structure to their own liking and at the same time establish for themselves an immunity against disaster from the effects of the other forces involved that we should not rush in and emulate them without mature thought.

I don't know whether you will agree with my conclusions or not, but I feel we would do well to tread slowly in these matters that might disturb the balance as it exists and that the real job is rather one of doing everything possible to arrange for free and unrestricted growth in every direction where profitable business is indicated.

IMPROVING CUSTOMER RELATIONS

(Continued from page 544)

psychology. A supervisory review of a liberal sample of the letters written, by means of extra carbons, and group discussion of selected cases provide good illustrations of the difference between good letters and poor letters. This procedure also gives the less inventive employees the benefit of thoughts and expressions used by their more apt associates. If more extensive letter writing training is needed, there are commercial experts who render letter improvement services by mail. Each enrolled employee receives a series of lessons and submits extra carbons of his letters on which the expert notes suggestions for further improvement. After this initial period there is a follow-up in the form of a periodic audit of the employee's letters. He also receives a monthly pamphlet giving examples of successful letters written by others.

Case studies, in addition to being helpful in themselves, usually furnish a good opportunity to review various portions of the origi-

nal training program which have a bearing on each case analyzed. When changes are made in rates, policies, or practices the supervisor has further opportunities to discuss the specific subject and to review related material. Companies with the most active training programs devote at least an hour and a half of primary contact employee's time each week toward maintaining maximum employee effectiveness.

Conclusion

As we stand off and look at the employee training picture as a whole, it is evident that there is no justification for complacency. We find that conditions controlling the need for employee training have perhaps changed faster than we have changed our training thinking. We see that our industry cannot afford to present itself to the public in anything less than its most favorable light. We know that our advertising men cannot do this job alone. We have no alchemists who can produce golden customer relations out of base customer contacts.

But it is not too much to expect that our companies and our industry can be sold to the public when every employee, from the newly hired laborer on up, knows his company, feels a part of it and radiates his personal interest among his acquaintances. Since our physical services are interpreted largely through our personal services, they will be more highly valued when every meter reader, cash teller and service man has been coached in the knack of making his or her business with each customer a symbol of our policies of courtesy and efficiency. Since customer complaints are a focal point in customer relations, every complaint will be a welcomed opportunity when our direct contact employees have been trained to displace suspicion and antagonism with confidence and respect.

When we have made the most of employee training possibilities we can look to the future with assurance that our customers will recognize that they are getting a better bargain from us than they would receive from the so called yardsticks set up under the influence of the "isms." When we have put our employee training house in good order we can face the era ahead of us with plans for meeting the increased demands rather than worries about what to do with idle capacity.

William Lotter Promoted

THE American Stove Company has announced the appointment of William Lotter as assistant to A. H. Brodbeck, director of research, in charge of research development of Magic Chef heavy duty cooking equipment.

Mr. Lotter, who was formerly chief engineer of the Cleveland division, has been with the company since 1929 in various capacities. During the war he was actively concerned with the engineering and production of primary and secondary cowl assemblies for the P-47 Thunderbolt. His many years' experience with the production of heavy duty gas ranges and a previous background of tool and die design qualify Mr. Lotter for his recent promotion.

Iowa-Illinois Gas Group Meeting

THE first group meeting of the Home Service Division of the Sales Promotion Department, Iowa-Illinois Gas and Electric Company, was held September 20, in the auditorium of the Davenport office.

Among the home service consultants in attendance were Beverly Schick, Davenport; Lois Wilson, Rock Island; Veronica McLaughlin, Moline; Elizabeth Clagg, Fort Dodge; Madelyn Bishop, Cedar Rapids; and Dorothy Park, Iowa City. Jean Raisty of the Ottunwa District was unable to be present.

Under the direction of Ruth Johnston, home service director, the meeting was featured by an introductory talk given by J. M. Hollingsworth, manager, Sales Promotion Department; a discussion of "The Fundamentals of Kitchen Planning" by Carl A. Nonnenmacher, sales training supervisor; and a talk on "Color in the Kitchen" by B. C. Hartenberger, design consultant.

The program also included discussions pertaining to calls made on purchasers of new equipment, newcomer calls, telephone information service, advertising, talks presented before women's organizations, radio programs, cooking classes, and other activities of the home service division. Sound motion films on kitchen planning and other home service subjects were shown during the afternoon session.

Future conferences of a similar nature are planned as a means of streamlining the home service program, coordinating it on a Company-wide basis and increasing its value to the customers of the Company.

Left to right, standing: C. A. Nonnenmacher, B. C. Hartenberger, Elizabeth Clagg, Madelyn Bishop, Veronica McLaughlin, Lois Wilson, Beverly Schick, J. M. Hollingsworth. Seated, left to right: Dorothy Park and Ruth Johnston

Eastern Natural Gas Sales Conference

AS the forerunner of a full prewar schedule of regional gas sales conferences covering the residential field, the Eastern Natural Gas Regional Sales Conference, sponsored by the Residential Gas Section of the American Gas Association, will be held February 13-14, at the Roosevelt Hotel, Pittsburgh, Pa.

Plans for the conference were perfected at a meeting of the Eastern Natural Gas Regional Sales Council in Pittsburgh, November 8, at which C. S. Stackpole, Baltimore, vice-chairman of the Section, presided. F. B. Jones, manager of sales and market research, Equitable Gas Company, Pittsburgh, was elected chairman of the council and is in charge of conference arrangements.

The tentative program calls for addresses by key executives on various promotional phases of automatic gas cooking, water heating, house heating and refrigeration. Other timely topics will include presentations on national advertising, home service, appliance financing, house-to-house selling technique, and a market analysis by a national public opinion sampling expert. A survey of the industry's broad-gauged problems will be presented in the opening keynote address.

A feature of the meeting will be a get-together conference luncheon on the first day.

Golf Prizes Awarded

TIE clasps in the shape of a golf club were awarded to members of the two high teams of the American Gas Association Testing Laboratories Golf League at a banquet closing the season recently.

Members of the winning team were Don Leverett, Milton Zare, Seymour Feinstein and Richard Stockman. Their names were engraved upon a new golf trophy which replaces one destroyed by fire two years ago. R. M. Conner, Laboratories Director, finished the season with the high individual score.

With golf out of the way, staff members have gotten off to a good start in bowling with six teams in the league.

Wins Award for Air Conditioning Work

JOHN NORDIN, right, center, had the painless task of accepting from Harvey Edmund, Pacific Coast Gas Association president, a check for $500 at the Association's annual banquet at San Francisco in September.

Mr. Edmund represented Servel, Inc., which awarded the check to Mr. Nordin for his outstanding contribution to the development of their all-year gas air conditioner.

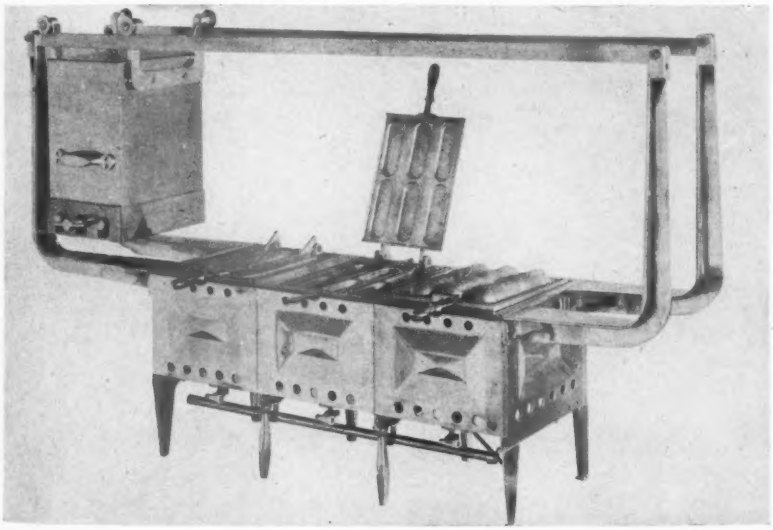
Mr. Nordin's $500 idea practically eliminates formation of scale deposits, known as "lime," from all surfaces in the water circuit of the air conditioning system. Metallic surfaces are kept clean, heat transfer efficiency is maintained, and maintenance and cleaning are reduced to a minimum.

Also on hand for the presentation were F. M. Banks, Southern California Gas Company, vice-president, left of Mr. Edmund, and C. A. Miller, Servel representative, right.

Frankfurters Cooked in the Rolls

A NEW idea for serving that all-American popular item, the "Hot Dog," has been developed by National Wonder-Foods, Inc. of San Francisco. They have a gas-fired frankfurter and roll cooker in which both the special roll batter prepared with a scientific flour mix and frankfurter is put in a mold which not only bakes the roll, but cooks the frankfurter as well.

The Wonder Baking Machines come in three sizes—with three, four and five griddles. Each griddle has six molds and the operation is simple. An attendant places a frankfurter in each mold, then moves to each griddle a batter container that runs along an overhead rail. A turn of a handle automatically puts a carefully measured amount of batter into each mold. The griddle tops are then closed and after a cooking cycle of three or four minutes, the baked roll and cooked frankfurter are ready to eat.



New "Wonder" baking machine

New A. G. A. Members

GAS COMPANIES

Canon Gas Service Co., Canon City, Colorado (F. Marion Chelf, President)

Greenfield Gas Co., Inc., Greenfield, Indiana (Wm. A. McClellan, President)

Indiana Gas Distribution Corp., Danville, Indiana (Wm. H. Maxon, Vice-President)

Jacksonville Gas Corp., Jacksonville, Florida (W. Harold Duguid, Vice-President & General Manager)

Kewanee Public Service Co., Kewanee, Illinois (H. K. Williams, Vice-President)

North Attleboro Gas Co., North Attleboro, Mass. (J. LeRoy Underhill, President)

St. Johnsbury Gas Co., St. Johnsbury, Vermont (A. M. Caranchini, Manager)

South Atlantic Gas Co.—Orlando Div., Orlando, Florida (B. G. Duncan, Vice-President)

South Atlantic Gas Co.—St. Augustine Div., St. Augustine, Florida (C. J. Noda, Vice-President)

Southwest Gas Corp., Ltd., Barstow, California (J. K. Koeneman, Vice-President)

Union Electric Power Co., East St. Louis, Missouri (G. W. Welsh, Manager)

Vermont Lighting Corp., Barre, Vermont (J. M. Nelson, President & General Manger)

SERVICE COMPANIES

Conversions and Surveys, Inc., New York, N. Y. (J. H. Warden, President)

ASSOCIATE COMPANIES

N. V. Technische Handelmaatschappij "ELGA," Curacao, N.W.I. (V. C. Hanriquez, Director)

MANUFACTURER COMPANIES

Anetsberger Brothers, Chicago, Illinois (A. M. Bornhofen, General Sales Manager)

Budco, Inc., Detroit, Michigan (Albert Budman, President)

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Burns Plumbing & Heating Co., Minneapolis, Minnesota (Lloyd R. Burns)

Form-Weld Co., San Francisco, California (Charles O. Morgan)

Gayton Mfg. Co., Inc., Minneapolis, Minnesota (C. C. Gabrielson, 1st Vice-President)

Groen Manufacturing Co., Chicago, Illinois (Fred H. Groen, Jr., President)

Inner-Tite Div., of Yara Engineering Corp.,

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Monitor Manufacturing Co., Chicago, Illinois (H. F. Freyer, Secretary)
Selfridge Co., The, Cleveland, Ohio (J. H. Selfridge, President)
Standard Fuel Engineering Co., Detroit, Michigan (G. H. Willett, Jr., President)
Standard Remote Control Valve Co., South Pasadena, California (Leonard June, Assistant to President)
Tapecoat Co., The, Evanston, Illinois (A. W. Bohne)

INDIVIDUAL MEMBERS

Mrs. Louise B. Anderson, Chas. S. Martin Distributing Co., Inc., Atlanta, Ga.
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Albert A. Azar, Stacey Bros. Gas Construction Co., Cincinnati, Ohio
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Charles A. Blanchard, Houston Natural Gas Corp., Houston, Texas
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Ralph C. Cameron, Ruud Mfg. Co., Pittsburgh, Pa.
Charles Carlson, Pacific Gas & Electric Co., San Francisco, Calif.
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Nelson P. Chesnutt, Southern Union Gas Co., Farmington, New Mexico
Morton M. Chorost, Homestead Appliance Co., Inc., Newark, N. J.
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Clinton B. Cole, Rochester Gas & Electric Corp., Rochester, N. Y.
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Walter T. Deveney, The Peoples Gas Light & Coke Co., Chicago, Ill.
Lloyd A. Dixon, Jr., Pittsburgh Equitable Meter Co., DuBois, Pa.
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Mary C. Dorn, Tampa Gas Co., Tampa, Florida
Donald V. Doub, Pacific Gas & Electric Co., San Francisco, Calif.
A. L. Drake, Central Illinois Light Co., Peoria, Ill.
W. H. K. Dunbar, Ameranda Petroleum Corp., Rio Vista, Calif.
Herb Duncan, Natural Gas Equipment, Inc., San Francisco, Calif.
Basil Dunglinson, The Peoples Gas Light & Coke Co., Chicago, Ill.
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Hugh E. Ferguson, The Peoples Gas Light & Coke Co., Chicago, Ill.
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Fabert F. Fisher, The Ohio Fuel Gas Co., Columbus, Ohio
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Robert H. Flanders, Virginia Electric & Power Co., Newport News, Va.
Maxwell B. Fogarty, Remington Rand, Inc., New York, N. Y.
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Edgar W. Gettinger, American Furnace Co., St. Louis, Mo.
Carroll T. Gillis, Pacific Gas & Electric Co., San Francisco, Calif.
Elliott Ginochio, Pacific Gas & Electric Co., Red Bluff, Calif.
Howard J. Glasgow, San Diego Gas & Electric Co., La Mesa, Calif.
Clarence B. Glover, United Engineers & Constructors, Inc., Philadelphia, Pa.
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Oscar A. Gray, United Engineers & Constructors, Inc., Philadelphia, Pa.
Paul H. Greenaway, Florida Power & Light Co., Miami, Florida
Wm. N. Grinstead, The Ohio Fuel Gas Co., Columbus, Ohio
B. F. Grizzle, Edward Falck & Co., Washington, D. C.
C. H. Gueffroy, Portland Gas & Coke Co., Portland, Oregon
Sivert A. Haavik, Pacific Gas & Electric Co., San Francisco, Calif.
G. H. Hagar, Pacific Gas & Electric Co., San Francisco, Calif.
Norman H. Hall, The East Ohio Gas Co., Cleveland, Ohio
John Hammond, Jr., South Norwalk, Conn.
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H. C. Hanson, Continental Water Heater Co., Ltd., San Francisco, Calif.
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Hanford Z. Hight, Dresser Mfg. Div., Bradford, Pa.

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Scott Hughes, Pacific Gas & Electric Co., Merced, Calif.
Charles L. Hulswitt, Warren Petroleum Corp., Detroit, Michigan
Harry P. Humphreys, Pacific Gas & Electric Co., Marysville, Calif.
Thomas P. Jenkins, Pacific Gas & Electric Co., Stockton, Calif.
Allison L. Jones, Florida Power & Light Co., Miami, Florida
Edwin F. Jones, City of St. Paul, Dept. of Public Utilities, St. Paul, Minn.
Robert D. Jones, Consumers Gas Co., Reading, Pa.
Simon Kaset, K & S Appliances Co., Memphis, Tenn.
L. M. Kass, Pacific Gas & Electric Co., Oakland, Calif.
Henry Kehmna, Pacific Gas & Electric Co., San Francisco, Calif.
Warren H. Keller, The United Light & Railways Service Co., Chicago, Ill.
Eugene J. Kerr, Baltimore & Ohio Railroad Co., Baltimore, Maryland
Leon C. Kimpal, Rochester Gas & Electric Corp., Rochester, N. Y.
R. B. Kipp, Southern California Gas Co., Los Angeles, Calif.
Marquis A. Kirk, The Peoples Gas Light & Coke Co., Chicago, Ill.
William J. Kitto, Pacific Gas & Electric Co., Berkeley, Calif.
Mark F. Kleeberg, The Peoples Gas Light & Coke Co., Chicago, Ill.
George F. Knight, The Consumers' Gas Co. of Toronto, Toronto, Canada
Keith M. Knopf, Jas. Graham Mfg. Co., Newark, Calif.
Lewis Kramer, K & S Appliance Co., Memphis, Ten.
Harold G. Krayenhof, Lennox Furnace Inc., Syracuse, N. Y.
Daniel Kuffner, New York & Richmond Gas Co., Staten Island, N. Y.

Office Boy

by Avery Giles

Although his work's considered menial,
He's jolly, courteous and genial;
He'll fill an inkwell, pull a proof,
Do a repair job on the roof,
Pinch-hit for the receptionist,
Art, too, and Copy's on his list;
That he'll go far there is no doubt:
The man the shop can't do without!

Printers' Ink

Volney H. Kyle, Jr., Ford, Bacon & Davis, Constr. Corp., Monroe, La.
H. C. Lampe, Ebasco Services, Inc., New York, N. Y.
Arthur R. Laney, Jr., Washington Gas Light Co., Washington, D. C.
L. A. Lapeltree, Pacific Gas & Electric Co., San Francisco, Calif.
Herman L. Larson, The Peoples Gas Light & Coke Co., Chicago, Ill.
Charles H. Leach, The Liverpool Gas Co., Liverpool, England
Henry Lenninger, Pacific Gas & Electric Co., Oakland, Calif.
Elmer H. Lerch, Rochester, Gas & Electric Corp., Rochester, N. Y.
John F. Linehan, The Peoples Gas Light & Coke Co., Chicago, Ill.
Howard S. Lipp, The Peoples Gas Light & Coke Co., Chicago, Ill.
Charles R. Locke, The Peoples Gas Light & Coke Co., Chicago, Ill.
Roger Lyon, Southern California Gas Co., Hollywood, Calif.
William H. Lyon, Federal Power Commission, Arlington, Virginia
M. Eugene Malone, Consumers Power Co., Kalamazoo, Michigan
Emory A. Manlove, The Peoples Gas Light & Coke Co., Chicago, Ill.
Chas. S. Martin, Chas. S. Martin Distributing Co., Inc., Atlanta, Ga.
Earl P. Martin, The Cooper-Bessemer Corp., Houston, Texas
Charles E. Mattingly, Minnesota Natural Gas Co., Worthington, Minnesota
Clyde B. McAuley, Pacific Gas & Electric Co., San Francisco, Calif.
A. James McCollum, Pacific Gas & Electric Co., San Francisco, Calif.
J. P. McElroy, Pacific Gas & Electric Co., Fresno, Calif.
Frank T. McEvoy, New York Power & Light Corp., Albany, N. Y.
G. H. McKay, Tennessee Gas & Transmission Co., Houston, Texas
Paul C. McKenzie, P. C. McKenzie Co., Pittsburgh, Pa.
Harry M. McKnight, Pacific Gas & Electric Co., San Francisco, Calif.
G. W. J. McMillan, Southern California Gas Co., Los Angeles, Calif.
Stuart E. McMurray, The Peoples Natural Gas Co., Pittsburgh, Pa.
William J. Menet, The Peoples Gas Light & Coke Co., Chicago, Ill.
Philip W. Mettling, Cooper-Bessemer Corp., Los Angeles, Calif.
Lester R. Michelsen, The Peoples Gas Light & Coke Co., San Francisco, Calif.
George W. Miller, The Philadelphia Electric Co., Philadelphia, Pa.
Ralph M. Miller, Plymouth Gas Light Co., Hyannis, Mass.
John Mitchell, Eastern Gas & Fuel Associates, Boston, Mass.
Paul E. Mong, Pacific Gas & Electric Co., San Francisco, Calif.
Charles J. Morse, The Peoples Gas Light & Coke Co., Chicago, Ill.
P. V. Mullins, Bureau of Mines, Amarillo, Texas
Enrique J. Munoz, Cia. Petrolers "MYM," S. A., Monterrey, Mexico
W. L. Murray, Pacific Gas & Electric Co., San Francisco, Calif.
James P. Neill, H. C. Price Co., Bartlesville, Oklahoma
H. James Neilson, Consumers Power Co., Saginaw, Michigan
Lloyd M. Nelson, Southern California Gas Co., Glendale, Calif.
Marshall Newcomb, Lone Star Gas Co., Dallas, Texas
C. J. Nicholas, Bastian Morley Co., San Francisco, Calif.
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Walter J. Ott, Cincinnati Gas & Electric Co., Cincinnati, Ohio
Richard B. Paquette, The Peoples Gas Light & Coke Co., Chicago, Ill.
W. H. Park, Pacific Gas & Electric Co., Oakland, Calif.
F. W. Parker, Pacific Gas & Electric Co., Sacramento, Calif.
Spalding Peck, The Lake Gas Co., Russels Point, Ohio
A. Arthur Pekelner, Pittsco Water Heaters, Inc., New York, N. Y.
George M. Pemberton, Cincinnati Gas & Electric Co., Cincinnati, Ohio
L. L. Peters, American Stove Co., Atlanta, Ga.
O. L. Philpott, Pacific Gas & Electric Co., San Francisco, Calif.
Earl W. Pierson, Arthur Anderson & Co., Houston, Texas
Richard A. Plata, New York & Richmond Gas Co., Staten Island, N. Y.
Chris J. Poppelreiter, The Peoples Gas Light & Coke Co., Chicago, Ill.
Frederic J. Porter, Jr., Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Fred M. Porter, Chicago By-Products Corp., Chicago, Ill.
G. Rogers Porter, Roberts & Mander Corp., San Francisco, Calif.
Chester H. Prouty, Pacific Gas & Electric Co., San Francisco, Calif.
Ira J. Rapson, Michigan Consolidated Gas Co., Detroit, Michigan
Fred R. Rauch, The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Alan F. Read, General Controls Co., Detroit, Michigan
Lewis Reese, Pacific Gas & Electric Co., Stockton, Calif.
David N. Reid, Pacific Gas & Electric Co., Stockton, Calif.
Charles W. Richardson, Geo. D. Roper Corp., Brooklyn, N. Y.
W. E. Rivinius, Southern California Gas Co., Inglewood, Calif.
James K. Roberts, Florida Public Utilities Co., West Palm Beach, Fla.
Dan A. Rothenbush, Pacific Gas & Electric Co., Modesto, Calif.
F. G. Rothganger, Pacific Gas & Electric Co., Oakland, Calif.
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Elmer F. Sahlender, The Philadelphia Gas Works Co., Philadelphia, Pa.
William E. Sauer, The Peoples Gas Light & Coke Co., Chicago, Ill.

Lawrence D. Schmidt, U. S. Bureau of Mines, Morgantown, W. Va.
Everett V. K. Schutt, Central Hudson Gas & Electric Co., Newburgh, N. Y.
D. M. Seavert, California Maine Corp., San Francisco, Calif.
Harry T. Shirley, Pacific Gas & Electric Co., Fresno, Calif.
Victor W. Sisung, Consumers Power Co., Lansing, Michigan
Herbert H. Skinner, Boston, Mass.
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John G. Smith, Pacific Gas & Electric Co., San Francisco, Calif.
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John J. Solon, The Peoples Gas Light & Coke Co., Chicago, Ill.
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W. Arthur Sprague, New York State Electric & Gas Corp., Ithaca, N. Y.
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R. T. Stephens, Pacific Gas & Electric Co., San Francisco, Calif.
Henry J. Sterk, The Peoples Gas Light & Coke Co., Chicago, Ill.
Howard R. Stevenson, The Detroit Edison Co., Port Huron, Michigan
Charles M. Stone, Duke Power Co., Charlotte, N. C.
A. P. Stryker, Pacific Gas & Electric Co., San Francisco, Calif.
Franklin M. R. Stuber, Allentown-Bethlehem Gas Co., Allentown, Pa.
Leo J. Sullivan, Rochester Gas & Electric Corp., Rochester, N. Y.
Mary R. Sullivan, The Gas Service Co., Topeka, Kansas
Carlyle W. Sweet, Peoples Water & Gas Co., Fort Lauderdale, Fla.
Harry Swenson, The Peoples Gas Light & Coke Co., Chicago, Ill.
Molly H. Sylvester, Pacific Gas & Electric Co., San Francisco, Calif.
Geo. H. Taylor, Pacific Gas & Electric Co., San Francisco, Calif.
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Louise Thomson, Pacific Gas & Electric Co., Fresno, Calif.
Wm. O. Thompson, California Maine Corp., San Francisco, Calif.
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Harry H. Tinch, W K M Co., Inc., Houston, Texas
John J. Toolan, Pacific Gas & Electric Co., Stockton, Calif.
Harry Truman, John Inglis Co., Ltd., Toronto, Canada
Russell W. Uhler, Allentown-Bethlehem Gas Co., Bethlehem, Pa.
Herbert R. Underwood, Consolidated Gas El. Lt. & Power Co., Baltimore, Md.
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Don Vallero, Pacific Gas & Electric Co., San Francisco, Calif.
J. R. Vernon, Pacific Gas & Electric Co., Eureka, Calif.
Marshall Virello, Pacific Gas & Electric Co., San Francisco, Calif.
Vernon C. Vissiere, H. R. Basford Co., San Francisco, Calif.
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A. Jessop Wilmer, Allentown-Bethlehem Gas Co., Easton, Pa.
Earl F. Woodward, North Penn Gas Co., Port Allegany, Pa.
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Harry K. Wrench, Jr., Wisconsin Fuel & Light Co., Manitowoc, Wisconsin
E. J. Wright, San Diego, Gas & Electric Co., San Diego, Calif.

Personnel Service

SERVICES OFFERED

General or Sales Manager, twenty-five years experience industrial and public utility engineering valuation, administration and sales. Recently returned five years Naval Service. Now practicing as mechanical consultant. South or Southwest preferred. **1531.**

Industrial Gas Sales Engineer would like position with future with gas utility, or sales connection with equipment manufacturers. Now employed as District Industrial Sales Manager, large natural gas utility. Licensed Professional Engineer, 19 years experience with good record in sales and supervision of sales of natural gas furnaces and burners. (42). **1532.**

Territorial **Sales** and **Service Representative.** Would like anything requiring promotional contact through utilities. Eighteen years wide Sales experience with two large stove organizations. **1533.**

Technical Writer and Industrial **Engineer.** College Graduate. Air Conditioning, also experience with Diesel generator concerns. Thorough knowledge and experience with production procedures, scheduling, expediting, purchasing and sales. Edited magazines and wrote many Technical Manuals. Liaison Engineer. Possesses initiative, tact, energy; get along well with people; adaptable. Married (30). **1534.**

Seven years **General** and **Property Accounting** Supervision; familiar with NARUC and FPC prescriptions; adaptation of forms to and use of IBM tabulating machines; original cost and depreciation studies; preparation and perpetuation of continuing property inventories; field and office cost audits and analyses; studies of office methods and procedures. **1535.**

Consulting Engineer—19 years experience in appliance field—familiar with A. G. A. requirements, and manufacturing processes—specialize in burner designs for all appliances—available on part-time fee basis. **1536.**

Experienced Executive—Management Assistant—Graduate Engineer with well rounded education and background in corporate affairs—worked in both electric and gas companies. Particularly interested in public relations having successfully carried out responsible assignments in this field. Veteran. **1537.**

POSITIONS OPEN

Gas Engineer with experience on layout and operation of manufactured gas plants and distribution systems wanted by general gas engineering organization. Reply giving details of age, education and experience. **0471.**

Local Representative for gas property. Position now available for man experienced in natural gas distribution. Property located in North East, Pennsylvania. Must be capable of doing all work in connection with the operations of property consisting of 1100 consumers meters and small natural gas production. State salary, experience and references. **0472.**

Production Engineer. Experienced Engineer in Water Gas Manufaeture who desires a position with a progressive company located on the Atlantic Coast. State age, experience and salary desired in first communication. **0473.**

Experienced Distribution Engineer, familiar with high and low pressure, customer requirements of metering and appliance servicing. Supervisory position eastern company having a rapid expansion program. State age, experience, when available and salary. **0474.**

One of the largest gas companies in the Middle West has an excellent opportunity for a **Mechanical Designer** 30 to 40 years of age with experience in plant layout, power plant equipment and reinforced concrete and steel. This position is not a temporary one and all replies will be treated confidentially. **0475.**

Recent Graduate **Mechanical Engineer.** Well established Western New York manufacturer requires services of a recent graduate with some experience in gas conversion burner and furnace testing and development work to assist chief engineer. Write fully, giving experience, salary expected and date available. Include photo if available. **0476.**

Gas Plant Engineer with minimum of two years experience in water gas production and three years college in engineering. Supervisory position Gas Plant operation, maintenance and construction. Middle Eastern Seaboard. **0477.**

Cadet Engineers, **engineering assistants,** graduates of recognized engineering schools, civil or mechanical degrees preferred. Age to 30; Start $200 and grow with organization. **0478.**

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